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EXSTROPHY OF THE BLADDER AND ITS TREATMENT *

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Exstrophy of the bladder is a rare congenital malformation; it is reported by Neudörfer[1] as occurring once in 50,000 births. The anomaly is probably occasioned by variations of the salts in the amniotic fluid surrounding the embryo. It is one of the most serious of malformations, as approximately one half of those suffering from it die during the first ten years of life, and the great majority are dead before they are 40. The condition is very distressing from the tenderness and the difficulty of protecting the protruding bladder, the constantly dribbling urine requiring much absorptive dressing or an equally foul smelling receptacle which leads such persons to shun society. Associated defects are epispadias in the male, an absence of the anterior pubic bone in all cases, and an apparent absence of the umbilicus, which becomes the upper margin of the mucocutaneous juncture, the urachus being absent. In the case of a child of 5 in whom exstrophy was the result of assault, it was asserted that the pubic bone later disappeared, causing the condition to resemble congenital exstrophy.[2] The lack of the pubic arch makes the pelvis apparently wider, and the sacro-iliac joints become fixed early. In the female, procreation is possible. Winslow[3] has reported the condition in a woman who had given birth to four children (Fig. 1).

The various measures for improving the condition are plastic skin covering or closure of the bladder mucosa. This method was highly developed by Roux[4] in 1852 and has been variously modified since by Thiersch,[5] Nélaton,[6] Wood[7] and others. The great defect by the plastic closure methods came from the necessity of using hair-growing skin, which later accumulates lime deposit and adds to the foulness of the uncontrolled bladder. Passavant[8] aided the closure by compressing the half formed pubic arches, and Koch,[9] König[10] and others made subcutaneous section of the bony arches. Trendelenburg[11] added to this method the partial separation of the sacro-iliac joint to more nearly approximate the pubic arches over the bladder. The septic uncontrolled pouches formed by these operations made it possible to wear some sort of drainage apparatus in which a portion of the urine could be accumulated, but the danger of diseased kidneys from ascending infection was actually increased. Additional methods of treatment were devised by Subbotin[12] and Lerda,[13] who, before closing the bladder, tunneled a space between the sphincter ani and the rectal mucosa and drew through it a folded strip of bladder wall as a tube, the anal sphincter closing the new urethra as well as the anus. The operative mortality in these cases was 25 per cent., and the bladder still remained a septic sac.

Another method for the relief of the deformity was to construct other closed cavities to serve as a bladder. Gersuny[14] separated a loop of bowel, and after establishing the continuity of the alimentary canal, brought the lower end of the loop through a tunnel opening within the anal sphincter as in the Subbotin method, the ureters being inserted into the upper end of the loop, which also developed a septic tank. The operation of Makkas[15] developed a bladder from the cecum. The ileum was divided at the ileocecal valve, which was closed on the cecal side, the ascending colon divided and both ends closed, and the ileum joined end to side in the upper segment of the ascending colon. The appendix was brought through the abdominal wall as an appendicostomy, the new bladder being emptied at regular intervals by a catheter passed through the appendix. This operation was performed in 1910. I saw his patient two years afterward. At that time the ureters were enormously dilated from the cecum to the kidneys, and the new bladder was septic. The cloaca of birds was looked on as a solution of the problem. The ureters were joined to the sigmoid or rectosigmoid, and the rectum was utilized as both a fecal and a urinary receptacle. The high mortality of this method showed a necessity for improvement in technic, but the control was good. To

* From the Mayo Clinic.

* Presented before the Tri-State Medical Society, Dubuque, Iowa, Sept. 6, 1917.

1. Neudörfer, quoted by Boogher, J.: Exstrophy of the Bladder, Urol. and Cutan. Rev., 1916, **20**, 376-377.

2. Packard, H.: Eversion of Bladder as a Late Sequel of Mutilation Caused by Rape in Early Childhood, Ann. Surg., 1914, **59**, 555-557.

3. Winslow, R.: Report of a Case of Exstrophy of the Bladder Operated on Nearly Thirty Years Ago, with Subsequent History, Surg., Gynec. and Obst., 1916, **22**, 350-352.

4. Roux, J.: Exstrophie de la vessie, Union méd., 1853, **7**, 449, 453.

5. Thiersch: Verhandl. d. deutsch. f. Chir., 1882, **11**, 89; Zentralbl. f. Chir., 1876, p. 504, quoted by Connell (Note 26).

6. Nélaton: Gaz. hebd. de méd., 1854, p. 1.

7. Wood, J.: Exstrophy of the Bladder, Brit. Med. Jour., 1880, **1**, 278.

8. Passavant, G.: Die Blasen-Harnröhrennaht mit Vereinigung der Schambeinspalte bei angeborener Blasenspalte mit Epispadie, Arch. f. klin. Chir., 1887, **34**, 463-500; 1890, **60**, 1.

9. Koch, C. F. A.: Eine modifizirte Trendelenburg'sche Blasenspaltoperation, Zentralbl. f. Chir., 1897, **36**, 953-956.

10. König: Verhandl. d. deutsch. Gesellsch. f. Chir., 1896, **1**, 77.

11. Trendelenburg, F.: Zur Operation der Ectopia Vesicae, Zentralbl. f. Chir., 1885, pp. 857-886; Ann. d. mal. d. org. gén.-urin., 1903, p. 782.

12. Subbotin, M.: Neues Verfahren zur Bildung der Harnblase und Harnröhre mit einem Sphincter aus dem Mastdarm bei Exstrophia vesicae, Epispadie hohen Grades und Urininkontinenz, Zentralbl. f. Chir., 1901, **28**, 1257-1260.

13. Lerda, G.: Contribution au traitement de l'exstrophie de la vessie, Jour. de chir., 1913, **10**, 549-562.

14. Gersuny: Wien. klin. Wchnschr., 1898, No. 43, quoted by Connell (Note 26).

15. Makkas, M.: Zur Behandlung der Blasenektopie: Umwandlung des ausgeschalteten Coecum zur Blase und der Appendix zur Urethra, Zentralbl. f. Chir., 1910, **37**, 1073-1076.

avoid ascending infection and dilatation of the ureters the sigmoid was divided, the proximal sigmoid joined end to side into the rectosigmoid, and the ureters inserted into the upper end of the distal sigmoid. While the feces did not flow over the ends of the ureters directly, the gas, fluids and bacteria could not

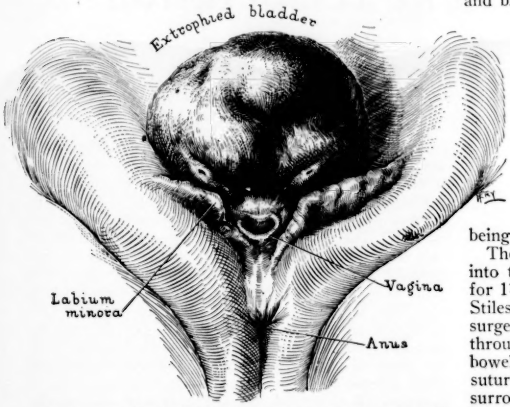

Fig. 1.—Exstrophy of bladder in the female; exposed mucosa with ureteral openings.

be prevented from causing infection, and there was but little improvement in the mortality. Other methods were to insert the right ureter into the appendix and the left into the sigmoid, but with these also there was ascending infection of the kidneys.

The next modification was to preserve the small openings of the ureters as they passed through the walls of the bladder, in the belief that this mechanism was Nature's safeguard against infection. The Maydl[16] operation, developed in 1892, removed the base of the bladder with the ureters attached and inserted the reversed segment into an incision in the anterior wall of the rectum. The operation is performed extraperitoneally and has been done transperitoneally. In the male it is not difficult, but in the female it is complicated. By this method Russian surgeons report a mortality of 32 per cent., Orlow[17] a mortality of 17 per cent. in sixty-one cases, and Drucbert[18] a mortality of 27 per cent. in eighty-one cases within fifteen days of the operation. We operated on three patients by this method, and two died. Moynihan[19] uses a larger area of the bladder in the Maydl operation, thus greatly increasing the rectal capacity. Sherman's[20] work with Peters' modification, based on the belief that the protection is in the small orifice of the ureter, was to dissect the ureter out of the bladder, retaining the mucus-covered ends intact, and to transplant them into the rectum.

It is true that Nature's method of emptying a duct is always by indirection; thus the salivary ducts, the common duct of the liver and the ureters pass through the muscularis and continue for a distance between the mucous membrane and the firmer outer wall of the cavity. Pressure from within compresses the ducts, and blocks against dilatation and ascending infection. The fact seemingly was not recognized that the mechanical principle of the passage of the ureter through the wall of the bladder and its mucosa could not be retained after the loss of its innervation. The surgical principle of such duct entrances is recognized in the Witzel[21] operation of gastrostomy and enterostomy, in which leakage is prevented by the tunnel made by folding the wall of the stomach or bowel over the tube for 1¼ inches. The Stamm-Kader[22] method accomplishes the same thing by a series of purse strings, a funnel entrance being made into the viscus.

The secret of successfully anastomosing the ureter into the bowel is to tubularize the ureteral entrance for 1¼ inches. There are two methods of doing this. Stiles[23] followed the plan of the Russian and Polish surgeons of passing the ureter into the intestine through a small opening, and depressing it into the bowel, which is folded over it, the folds being held by suture; the mechanism then consists of the ureter surrounded by the whole thickness of the wall of the intestine—the Witzel method. Coffey's[24] modification was first developed for the treatment of obstruction of the common duct of the liver by uniting it with the duodenum, and has proved most efficient for ureteral transplantation. It does not narrow the lumen of the intestine, and is carried out as follows: The peritoneum and muscularis are incised longitudinally for from 1¼ to 1½ inches down to the mucous membrane but not through it. The incision is best made in the firmer longitudinal bands of the wall of the sigmoid.

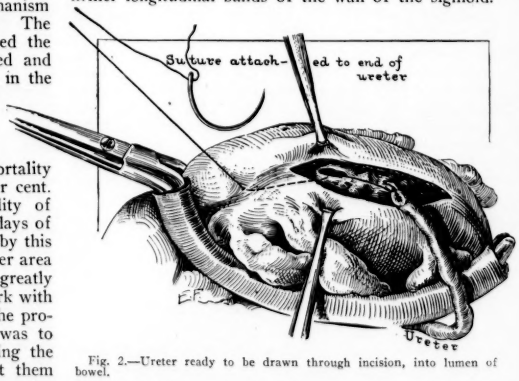

Fig. 2.—Ureter ready to be drawn through incision, into lumen of bowel.

The ureter is exposed by an incision in the peritoneum in the posterior pelvic wall, and is isolated to within

16. Maydl, K.: Ueber die Radikaltherapie der Blasenektopie, Wien. med. Wchnschr., 1894, **44**, 25-29; 1896, **46**, 28-31.
17. Orlow, L.: Traitement opératoire de l'exstrophie de la vessie; transplantation des uretères par le procédé de Maydl, Rev. de gynéc. et chir. abd., 1903, **7**, 795, 852.
18. Drucbert, J.: Les résultats éloignés de l'opération de Maydl dans l'exstrophie vésicale, L'echo méd. du nord, 1904, pp. 481-484.
19. Moynihan, B. G. A.: Extroversion of the Bladder: Relief by Transplantation of the Bladder into the Rectum, Ann. Surg., 1906, **43**, 237-240.
20. Sherman, H. M.: Exstrophy of the Bladder Successfully Treated by Peter's Method, THE JOURNAL A. M. A., Sept. 23, 1905, pp. 890-892.
21. Witzel, O.: Zur Technik der Magenfistelanlegung, Zentralbl. f. Chir., 1891, **18**, 601-604.
22. Stamm, M.: Gastrostomy; A New Method, Tr. Ohio Med. Soc., 1894, **49**, 164-168; Med. News, 1894, **65**, 324-326. Kader, B.: Zur Technik der Gastrostomie, Zentralbl. f. Chir., 1896, **23**, 665-670.
23. Stiles, H. J.: Epispadiasis in the Female and Its Surgical Treatment, Surg., Gynec. and Obst., 1911, **13**, 127-140.
24. Coffey, R. C.: Physiologic Implantation of the Severed Ureter or Common Bile Duct into the Intestine, THE JOURNAL A. M. A., Feb. 11, 1911, pp. 397-403.

1 or 1½ inches of the bladder, where it is divided and the distal end ligated. From 2½ to 3 inches of the ureter are separated, the posterior peritoneal incision is closed by suture to the point where it emerges, the lower end of the ureter is split for one-fourth inch, a curved needle with chromic catgut is passed through the end, the catgut is tied, and the short end of the thread is cut.

The mucous membrane in the lower end of the incision in the wall of the intestine is now perforated into its lumen. In preparing for this and to prevent contamination of the wound, a large curved rubber-covered clamp is used to hold the bowel in position, and the union is made within the curve of the clamp. The curved needle on the catgut attached to the end of the ureter is passed into the lumen of the bowel through the small opening and out of the wall of the bowel one-half inch below it. Drawing the chromic catgut suture pulls the end of the ureter into the lumen of the bowel. The needle is then passed once through the peritoneum and muscularis in order that the catgut may be tied to hold the ureter fixed within the wall of the intestine. The sides of the incision in the outer wall of the bowel are closed over the ureter, the needle including its outer tissue in two or three sutures. A second row of peritoneal sutures is placed over this, extending down over the tied knot of the fixation suture which holds the ureter in place (Figs. 2 and 3). This gives the ureter a natural duct entrance. The slightest pressure from within closes the duct, but not sufficiently to prevent the delivery of urine by the automatic and intermittent waves of contraction occurring about six to eight times a minute during the period of activity.

The abdominal incision for the work is a low lateral pelvic incision, and is best made on the right side first. As the sigmoid naturally passes to the left, it can always be reached; while if the incision is made on the left side first, the slack bowel may have entirely disappeared from the attachments of the former operations. The intestine is held by a few sutures to the posterior peritoneum so as to cover the ureteral entrance. It is best to do but one side at the first operation, as the urine is absorbed from the large bowel like a Murphy drip. Tolerance is soon acquired, however, and the slight uremic mental apathy disappears in a week. The second ureter may be transplanted with no trouble in from one to two weeks after the first operation. A small tube may be kept in the rectum for the first few days unless it adds to the discomfort. Usually at once or at least within a few days the urine will be passed at moderately frequent intervals.

The right half of the colon is the absorbing side of the intestine. Little work is done by the lymphatics, nearly all absorption being by osmosis, and the fluids are taken by the portal circulation to the liver. It is not good judgment to use the right side of the colon for an anastomosis. Experimental work recently reported,[25] in which it was hoped that by utilizing a natural duct entrance into the intestine ascending infection could be avoided, showed that one ureter could be passed through the duct of Santorini, and the absorption of the urine from one kidney would not give marked symptoms, though when the second ureter was inserted the animals died from uremia. This was also shown in Connell's[26] experiments, in which the small intestine was used. Therefore we must keep to the large bowel and preferably to its lower end. Transplanting the ureters is advisable in the few cases in which extensive destruction of the base of the bladder and urethra have occurred following childbirth.

Children should be old enough to be able to attend to their own needs, that is, from 3½ to 5 years of age. In early life, also, there may be defects in the innervation of the rectum; and if prolapse of the rectum accompanies the exstrophy, this condition must be overcome by time, or by operation before the cloacal condition is instituted. After the age of 40 it is probable that ureteral anastomosis with the skin in the back is best from the standpoint of low mortality and future length of life. In this position receptacles can be readily adjusted for the collection of urine. The report of the cases mentioned below reveals the important fact that after operation these children were able to go to school and receive an education, which was impossible in their former state. The older ones are all working. One young woman has taken a three-year course in nurse's training, and a year ago passed through an attack of erysipelas without bad results.

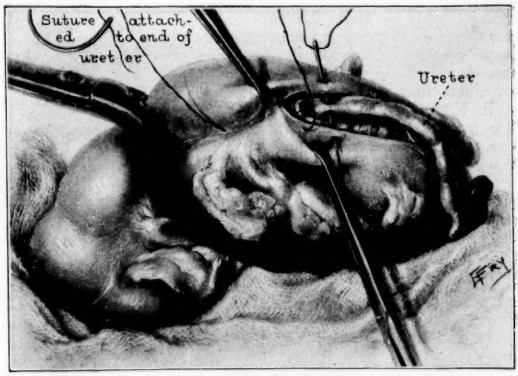

Fig. 3.—Infolded ureter in large bowel similar to gastrostomy.

Since 1896 we have seen thirty-seven patients with exstrophy of the bladder. Fifteen of these were not operated on at the time of their examination, some were too young to be operated on, and the others expected to return for operation. Six patients were operated on by the plastic method. One died six months later (traumatic exstrophy at childbirth; the child weighed 12½ pounds). The plastic operations did not afford control of the urine. Three patients were operated on by the Maydl-Moynihan method, and two died in the hospital, of uremia. Thirteen were successfully operated on by the transplantation method, with one operative death. One died from pneumonia a few weeks after leaving the clinic. One died three years after operation from pulmonary tuberculosis, and one three years after operation from typhoid fever.

25. Baird, J. S.; Scott, R. L., and Spencer, R. D.: Studies on the Transplantation of the Ureters into the Intestines, Surg., Gynec., and Obst., 1917, **24**, 482-484.

26. Connell, F. G.: Exstrophy of the Bladder, THE JOURNAL A. M. A., March 9, 1901, pp. 637-668.

NEUROTIZATION OF PARALYZED MUSCLE BY MUSCLE GRAFTING

A LABORATORY AND CLINICAL STUDY *

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This study was undertaken for the purpose of determining whether function could be returned to a muscle paralyzed by poliomyelitis, through the growth into it of nerves from a neighboring sound muscle. This neurotization I proposed to accomplish, not by implanting a sound nerve directly into the body of the paralyzed muscle, but by splitting the sheaths of both the normal and the paralyzed muscles, scarifying the fibers so as to remove all obstruction offered by the sarcolemma to the growth and extension of nerves, and then suturing the open surfaces of the two muscles together.

It has been my experience in one or two instances that after the transplantation of the biceps to do the work of the paralyzed quadriceps, there has followed some return of power to the paralyzed muscle. This may have been the result of unintentional muscle grafting.

In a personal communication, Sayre has informed me that in 1898, after an operation for paralysis in which all the anterior muscles of the foot were affected, with the exception of the extensor longus pollicis, he had a result which could not have been due entirely to the operation unless he unknowingly did more than he had planned. He performed the Parrish operation[1]: a fusion of the tendons of the tibialis anticus and the extensor longus pollicis, operating above the annular ligament, and, through the incision, he had made a careful examination of all the other muscles. Much to his surprise, power returned to the extensor communis digitorum. It is possible that he destroyed the intermuscular septum and the sarcolemma sufficiently to permit a muscle grafting.

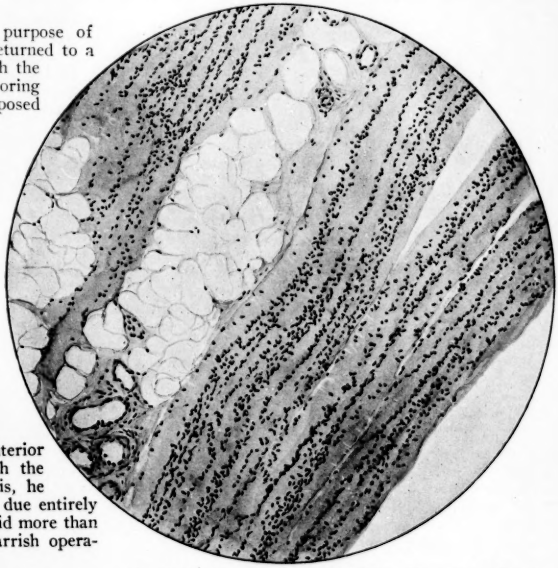

Fig. 2.—Muscle paralyzed by poliomyelitis. The great number of nuclei show that an unsuccessful attempt at regeneration has been made. Striations are absent; fibers are shrunken, and fat is deposited between them.

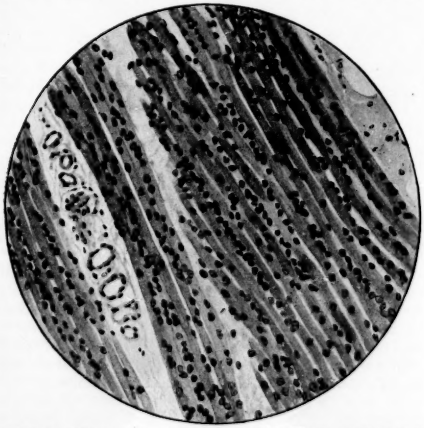

Fig. 1.—Muscle paralyzed by poliomyelitis. Fibers shrunken as in atrophy from disuse.

In June, 1905, Gersuny[2] grafted the deltoid to the trapezius for a shoulder paralysis. The patient was a young man and the cause of the condition is in doubt. After three months there was a slight return of movement. During the following months, improvement continued until in November the arm could be used normally except for the fact that it was still weaker than the other arm.

In February, 1907, von Hacker[3] operated for paralysis of the shoulder which followed an operation for tuberculous glands of the neck. His muscle grafting was at least partially successful, as the patient could lift the arm to the horizontal five months later.

The neurotization of paralyzed muscle by nerve implantation has been done by several surgeons. Heineke[4] has reported successful experiments, and Erlacher[5] has not only reported successes but claimed that hyperneurotization is possible. Steindler[6] of Iowa City has been successful in neurotizing paralyzed muscle by the implantation of sound nerves, but he does not believe it possible to hyperneurotize a muscle.

* Read before the Society of Alumni of Bellevue Hospital, Oct. 3, 1917.

1. Parish, B. S.: A New Operation for Paralytic Talipes Valgus and the Annunciation of a New Surgical Principle, New York Med. Jour., 1892, **56**, 402.

2. Gersuny: Wien. klin. Wchnschr., 1906, **19**, 263.
3. Von Hacker: Mitt. d. Ver. d. Aerzte in Steiermark, 1908, **45**, 58.
4. Heineke: Zentralbl. f. Chir., 1914, **41**, 465; Arch. f. klin. Chir., 1914, **105**, 517-523.
5. Erlacher: Ztschr. f. orthop. Chir., 1914, **34**, 561; Zentralbl. f. Chir., 914, **41**, 625; Am. Jour. Orthop. Surg., 1914-1915, **13**, 22.
6. Steindler: Am. Jour. Orthop. Surg., 1914-1915, **13**, 33; ibid., 1916, **14**, 707.

Elsberg[7] has determined a remarkable fact, namely, that if an artificially paralyzed muscle is implanted with its original nerve and also another motor nerve, reestablishment of function takes place through the original nerve and not through the foreign nerve. On the other hand, if the original nerve were not implanted, the foreign nerve would take up the work. He agrees with Steindler that hyperneurotization is impossible. He also found that eight weeks of paralysis produced the characteristics of atrophy, and that eight weeks after nerve implantation, normal appearance was regained and good contraction established. He reports several successful neurotizations, in which he transplanted a portion of the sound muscle with the nerve. Gerster and Cunningham[8] report successes with nerve implantation.

By experimenting on dogs, I have sought to inform myself regarding paralytic changes in muscles and also the changes which take place as a result of muscle grafting. This part of the work has been carried on in the Department of Experimental Surgery of the New York University and Bellevue Hospital Medical College. The histologic studies have been made by Dr. Alexander Fraser of the pathologic department.

The anterior tibial and the sciatic nerves were selected for section in the work on dogs. After an interval following the former operation and varying from two to six weeks, the paralyzed tibialis anticus muscle was grafted to the normal peroneus. After resection of a portion of the sciatic, the vastus externus was grafted to the paralyzed biceps.

Figure 1 shows atrophy in a specimen taken from a case of poliomyelitis. The same characteristics would be present in an atrophy from disuse. If there is absolute separation of a muscle from all nerve supply, a condition seldom obtained and perhaps impossible to obtain except in the case of the external rectus of the eye, the fibers undergo fatty degeneration. In atrophy from poliomyelitis, however, the muscle fibers are shrunken, and the nuclei increased, and there is no evidence of fatty degeneration.

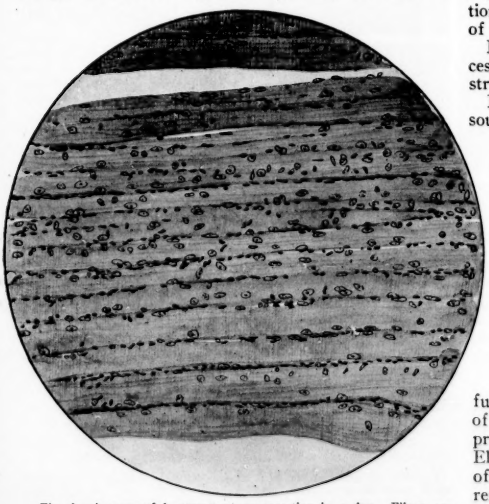

Fig. 3.—A successful attempt at regeneration in a dog. Fibers are compact, and striations may be seen.

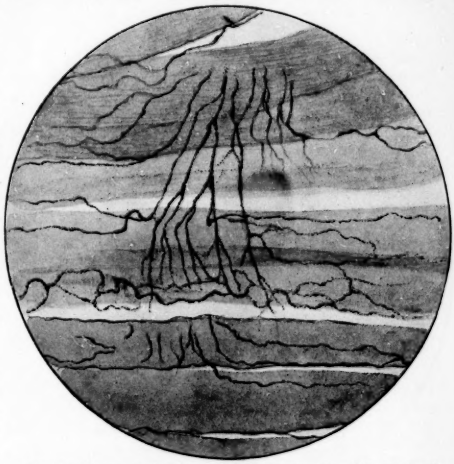

Fig. 4.—Nerves growing from paralyzed muscle above into paralyzed muscle below. Their dotted appearance and the straightness of their course are characteristic of new nerve growth.

Figure 2 shows an unsuccessful attempt at regeneration. The great number of nuclei testify to the activity of the endeavor, but there are no striations of fibers.

Figure 3, obtained from a dog, illustrates the successful attempt at regeneration. Note the nuclei, the striations and the compactness of the fibers.

Figures 4 and 5 show the growth of nerves from the sound muscle into the paralyzed muscle.

Figure 6 shows an end plate which in all probability is from the new nerve growth following the grafting operation.

The last three specimens were taken from a dog six weeks after the grafting operation and nine weeks after the artificial paralysis.

The operations on patients have been performed at the State Hospital for the Care of Crippled and Deformed Children and at the College Clinic. Specimens were taken and examined by Fraser from all of the clinical cases except six. The extent of atrophy was found not to be commensurate with the time since the attack, but to depend on the completeness of the paralysis. Loss of function may be complete in two muscles, and yet one of them may have sufficient nerve supply preserved to prevent the complete atrophy experienced by the other. Electricity has not helped me in estimating the extent of the paralysis, that is, the extent of the nerve supply remaining after the easily demonstrated loss of function. The discovery of some method of ascertaining the exact condition of the muscle before operation is greatly to be desired.

It is quite obvious that any attempt to regenerate a muscle which has lost all trace of muscle fiber would be futile. This was true in several of the patients operated on. They are all reported as cases of muscle

7. Elsberg: Science, New York, 1917, **45**, 318.
8. Gerster and Cunningham: Med. Rec., New York, 1917, **92**, 23.

grafting, since I finished the operations as nearly as possible as originally planned.

The operation is done as follows: An incision is made to bring into the field the bellies of the two muscles. Both are split lengthwise. The deeper edges

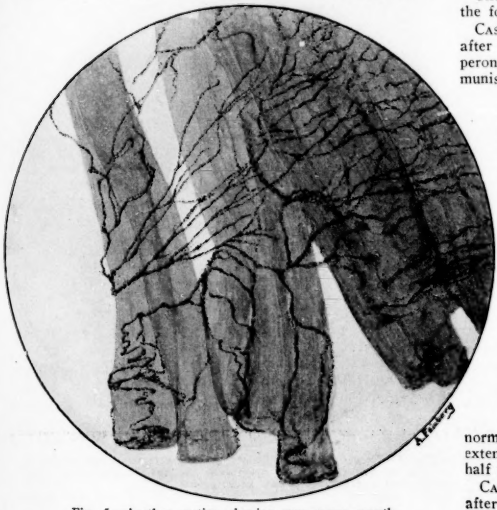

Fig. 5.—Another section showing new nerve growth.

of the two opened surfaces are sewed together with chromicized catgut. A few interrupted sutures are so placed as to approximate the central parts of the two freshened surfaces, and then the upper edges of the cuts are sewed together. The skin wound is then closed.

It will be seen that even if nothing is gained by such an operation, nothing is lost. No function is sacrificed, as is the case in such operations as muscle transplantation, tendon fixation and nerve implantation. The objection to early operation, which is so valid in all other procedures, does not hold good for this operation.

Sixteen cases, all I had done up to August, are here reported in the order of operation. In four of them, two paralyzed muscles each were operated on, making a total of twenty muscle graftings. Seven were complete failures, although one of these was operated on as recently as July 27 and may yet prove to be of some value. Six patients show a slight return of power, which, however, is by no means sufficient to be of functional use. This slight power, as we know from similar results in muscle transplantation, may add to the strength of the joint and thus be of some benefit. Four cases have given fair results and three good results. The last seven cases give us the courage to report our work at this time, although we fully realize that much more will have to be done in both the laboratory and the clinic before the operation should be either unconditionally accepted or discarded.

REPORT OF CASES

CASE 1.—C. B., aged 15, was operated on, Dec. 15, 1915, after an attack occurring nine years before. The normal gastrocnemius was grafted to the paralyzed peroneus longus. There was no return of power.

CASE 2.—J. D., aged 18, was operated on, Dec. 11, 1916, after an attack in early childhood. The normal soleus was grafted to the paralyzed peronei.

The result was good, as the peronei can now contract and the foot can be abducted.

CASE 3.—G. B., aged 14, was operated on, Feb. 12, 1917, after an attack occurring five years previously. The normal peroneus longus was grafted to the paralyzed extensor communis digitorum.

The result was good, as it was estimated that there was a return of fully half the muscle's normal power. A second operation was performed, March 18, when the normal biceps was grafted to the paralyzed vastus externus.

The result was slight, as the patella can now be moved upward and outward in attempts to extend the leg, and, with the opposition of gravity removed, extension is possible.

CASE 4.—E. N., aged 9, was operated on, Feb. 12, 1917, after an attack occurring at the age of 3. The normal tibialis anticus was grafted to the paralyzed extensor longus pollicis. There was no return of power.

CASE 5.—B. S., aged 13, was operated on, Feb. 23, 1917, after an attack occurring seven years previously. The normal peroneus longus was grafted to the paralyzed extensor communis digitorum. There was a slight return of power.

CASE 6.—J. M., aged 10, was operated on, Feb. 23, 1917, after an attack occurring four years before. The normal extensor longus pollicis was grafted to the paralyzed extensor communis digitorum. The result was good, as fully half the normal power was restored.

CASE 7.—H. B., aged 9, was operated on, March 7, 1917, after an attack occurring six years previously. The normal extensor longus pollicis was grafted to the paralyzed tibialis anticus and the normal soleus to the paralyzed tibialis posticus. There was no return of power.

CASE 8.—M. M., aged 4, was operated on, March 12, 1917, after an attack occurring ten months previously. The normal biceps was grafted to the paralyzed vastus externus. A fair result was obtained with the opposition of gravity removed; the patient can extend his leg.

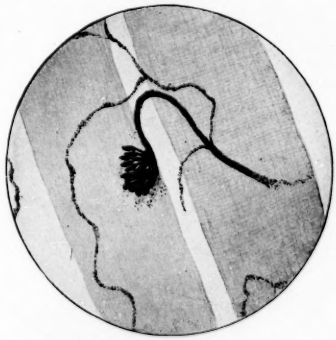

Fig. 6.—An end plate from a muscle-grafting specimen, in all probability from the new nerve growth.

CASE 9.—J. C., aged 2, was operated on, March 12, 1917, after an attack occurring one year previously. The normal tibialis anticus was grafted to the paralyzed extensor communis digitorum, and the normal flexor longus digitorum to the paralyzed soleus. The result was a fair return to the extensor communis digitorum, and a very slight return to the soleus.

CASE 10.—M. H., aged 6, was operated on, March 15, 1917, after an attack occurring one year previously. The normal extensor longus pollicis was grafted to the paralyzed tibialis anticus. The result was a slight return of power.

CASE 11.—H. McC., aged 9, was operated on, March 23, 1917, after an attack occurring one year previously. The normal peroneus longus was grafted to the paralyzed extensor longus digitorum. There was no return of power.

CASE 12.—R. L., aged 9, was operated on, April 1, 1917, after an attack occurring seven years previously. The normal biceps was grafted to the paralyzed vastus externus.

There was a slight return of power, so that the patient can now extend his leg, with the opposition of gravity removed.

CASE 13.—E. H., aged 11, was operated on, May 3, 1917, after an attack occurring at the age of 2. The normal peroneus was grafted to the paralyzed soleus, and the normal extensor longus pollicis to the paralyzed tibialis anticus.

Fair results were obtained in the tibialis anticus and none in the soleus.

CASE 14.—M. E., aged 12, was operated on, May 7, 1917, after an attack occurring in early childhood. The normal peroneus longus was grafted to the paralyzed soleus. The result was fair, as the muscle now contracts with perhaps half its normal strength.

CASE 15.—W. L., aged 12, was operated on, July 27, 1917, after an attack occurring five years previously. The normal extensor longus pollicis was grafted to the paralyzed tibialis anticus. The result was a slight return of power.

CASE 16.—R. S., aged 5, was operated on, July 27, 1917, the time of the attack being unknown. The normal extensor longus pollicis was grafted to the paralyzed tibialis anticus. There was no result.

Fifty-Fifth Street and Seventh Avenue.

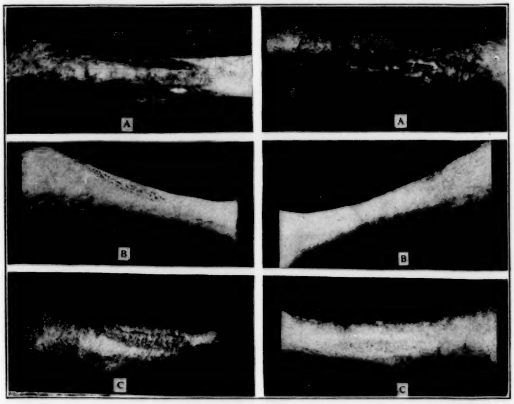

Fig. 1.—Scar involving the entire circumference of the leg. The patient had been bedridden for twenty-five months following a third degree burn. After the superficial ulcers were healed, three relaxation incisions were made under Schleich's infiltration anesthesia down to the deep fascia. The tissue was unfavorable for immediate grafting; hence granulation tissue was allowed to form in the wounds. *A*, four days after the incisions were made. The atrophy of the leg should be noted. The widths at the centers of the incisions were 3, 2¼ and 1⅝ inches. These defects were grafted with small deep grafts on the fifth day after the operation. *B*, the individual grafts and the firm, healthy appearance of the scar between the grafted areas, two months after grafting. *C*, six months after grafting. The width of the grafted areas should be noted. The depressions have filled up to the normal skin level. The leg has developed, and the patient walks without difficulty, and has again taken up his work.

Death Rate and Invalidity in Australia.—The report of the Committee Concerning the Causes of Death and Invalidity in the Commonwealth of Australia, issued in 1917, contains some interesting figures on community health in that country. In 1914 the general death rate for males was 11.7, for females, 9.3 per thousand. In our own registration area for the same period, the rates were 14.5 and 12.7 per thousand. One of the reasons assigned for the lower rate in Australia is the fact that the country is peopled with young men and women. A standardization for age would increase the rates.

The infant mortality rate in 1913 was 72.2 per thousand infants born alive. The lowest rate ever recorded in Australia was 68.5 in 1911. New Zealand had a rate of 51.4 in 1914. The rate in the United States, in our most progressive cities, when it does not exceed 100 is considered very favorable. The birth rate in Australia in 1914 was twenty-eight per thousand as against forty-four per thousand in New South Wales in 1864 and thirty-eight in Victoria in 1870. This shows a decrease in the birth rate, as in European countries and the United States.

THE USE OF RELAXATION INCISIONS IN DEALING WITH EXTENSIVE UNSTABLE SCARS

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The treatment of tightly stretched unstable scars that frequently break down has long been a source of worry to the surgeon, and of distress to the patient.

This type of scar usually follows extensive deep burns, or loss of tissue by trauma when the wound has been allowed to heal by the slow process of cicatrization, without the aid of skin grafting or of plastic operation.

The original wounds are always large and usually involve the entire circumference of a part, such as the leg or thigh, or occasionally the calvarium. In other words, the scar surrounds and compresses the part.

Some of the scars are bluish red with fine superficial vessels, while others are pale and seem to have little or no blood supply. Frequently there are superficial ulcers of varying size scattered over the surface. The scars are as unstable as wet tissue paper, and the slightest injury will start an ulcer that will require weeks to heal.

There is little resistance to trauma or infection, and an area that is healed may, without any apparent cause in a very short time, break down entirely, or multiple ulcers may develop.

A number of these patients have come under my care, and for a long time they gave me much trouble. After I had used many methods with little success, it occurred to me to try relaxation incisions, and to graft the defects thus made.

TECHNIC

It is preferable that the area be entirely healed before the incisions are made, but in some instances when the healing of the superficial ulcers has been extremely sluggish I have not waited for complete healing, but have operated as soon as the granulations have been brought into healthy condition. In preparation for operation in the unhealed cases, after the granulations are healthy, the part is put up in a dressing kept wet with physiologic sodium chlorid solution for twenty-four hours. The granulations are then painted with tincture of iodin, and the surrounding scar is cleaned with ether and alcohol.

Often the relaxation incisions can be made after infiltration with a local anesthetic, such as Schleich's solution, or 0.5 per cent. novocain. In other instances a general anesthetic is advisable, especially if large immediate Thiersch grafts are to be used to cover the defect.

On an arm or a leg (Fig. 1) long incisions should be made, parallel to the length of the part, down to the deep fascia or down to healthy tissue, if the destruction has been deeper than the fascia. Three relaxation incisions are usually sufficient for a limb, and they result in gaping wounds.

COMMENT

The immediate spread of each relaxation incision varies with the tightness of the scar. In some instances, it is as much as from 2½ to 3 inches at the center of the incision. The spread of the first incision is, of course, the widest.

After the tension is relieved, the appearance of the scar tissue between the incisions soon changes, and instead of the thin, glossy, mottled look, the tissue seems to thicken and to acquire greater stability. This improvement is much more marked after a few days.

When the scar is stretched over a broad expanse of bone, such as the skull (Fig. 2), as many horizontal incisions as may be necessary should be made down to the periosteum. The spread of relaxation incisions over bone is not so marked as over soft parts, and some undercutting may have to be done.

In these cases the beneficial effect is more marked after a week or two, but in the end the result is very satisfactory.

In some cases of very long standing the tissue, exposed by relaxation incisions, has atrophied from pressure and lack of use, and has such a poor blood supply that immediate grafting is unwise. In these cases it is advisable to wait for several days until the wounds are lined with granulation tissue, and then to apply the grafts.

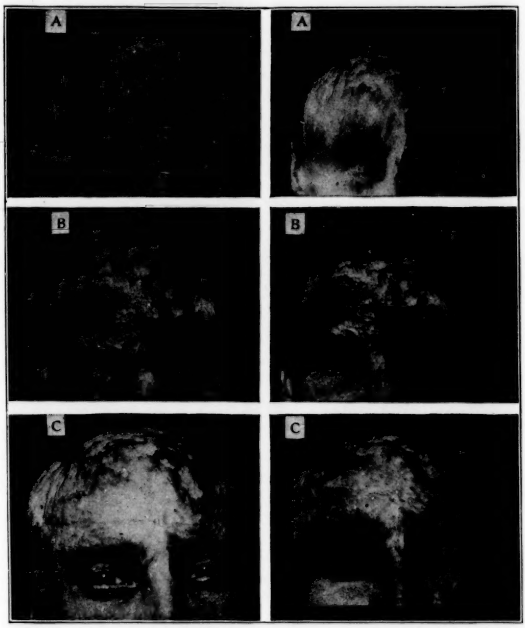

Fig. 2.—A tightly stretched adherent scar covering the entire cranium, the result of spontaneous healing following complete scalping. There were numerous superficial ulcerations. After ten days' treatment, and before complete healing of the ulcers, the relaxation incision was made. On account of the adherence of the scar to the skull, undercutting was necessary. A defect from 1½ to 2 inches wide was made across the forehead, from temporal region to temporal region. General anesthesia was necessary in this case, and the defect was grafted immediately with a single Thiersch graft from the thigh. *A*, before operation, five years after the accident. The face has the typical Mongolian expression caused by the pull of the scar tissue. The superficial ulcers should also be noted. *B*, two weeks after grafting. The graft has taken completely, and the ulcers are healed. Note the disappearance of the Mongolian expression. *C*, five months after grafting. The tension on the eyelids has been permanently relieved, and the condition of the scar on the vertex is much improved.

In other instances, immediate grafting is justified; but this point must be determined at the time of the operation.

It is extraordinary to note the rapidity of healing of the superficial ulcers after the relaxation incisions are made.

I have used only small deep grafts and Thiersch grafts on the defects caused by the relaxation incisions. These grafts so far have been entirely satisfactory; however, there is no reason why grafts of whole thickness skin should not be used in cases in which this type of graft may be necessary.

There has been no recurrence of superficial ulceration in any case when the tension has been completely relieved by the method previously described.

CONCLUSIONS

By the use of relaxation incisions with immediate or subsequent skin grafting of the defects, large unstable scars can be strongly healed in a comparatively short time, and patients who have been incapacitated for many months can resume their usual occupations.

I have used this method in a number of cases, with uniform success, and feel that it is a rational procedure and well worth trying.

1200 Cathedral St.

Exportation of Condensed Milk.—In order to discourage the operations of food speculators who have been purchasing for export from the retail stores the brands of condensed milk which the manufacturers have set apart for the American public, the War Trade Board, at the request of the Food Administration, has announced the following regulation to govern the exportation of condensed milk: "No licenses shall be granted for the export of condensed, canned, powdered or other forms of preserved milk unless there shall have been filed with the Bureau of Exports a certificate of the manufacturer stating that such milk has been sold directly to the exporter and for export purposes, or unless compliance shall be had with such other regulations as may be determined by the Food Administration." According to *Commerce Reports* speculation in food products has created a false condition of the market.

PROPHYLAXIS IN CEREBROSPINAL SYPHILIS *

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Of the treatment of general paresis, Ogilvie[1] has said:

The real problem is to recognize invasion of the central nervous system before even the interstitial tissue or the meninges are involved to any destructive extent. It is the consistent opinion of authorities generally that these parts are invaded prior to this period. If neurologic involvement is detected at this stage, we have adequate means of controlling it, and if these are judiciously employed, general paresis will, in not far distant years, become a comparatively rare picture in medicine.

We may add, not only general paresis but any form of cerebrospinal involvement.

There is no form of the later manifestations of syphilis so heartrending to the patient and his family and so discouraging to the clinician as the involvement of the cerebrospinal system. Occurring most frequently many years after the primary infection, this class of cases presents a pitiful picture, for once the nerve tissue of the patient has been destroyed, all hope of regeneration is lost. It is true that the condition may be arrested, but most cases levy an economic toll of loss on both the state and the family.

In 1914,[2] I called attention to the value of cerebrospinal fluid examinations in so-called "cured" syphilis in patients treated by the biologic method, that is to say, by a Wassermann examination of the blood. This report showed that many patients having a negative blood Wassermann reaction for from eighteen months to two years without treatment had subarachnoid involvement. It was recommended that lumbar puncture, with spinal fluid examinations, be demanded in all cases of syphilis, no matter what the stage of the disease, as a control on future complications of the nervous system.

Since that time, as an additional diagnostic aid, 108 spinal punctures have been made on all patients, regardless of whether or not a definite history of syphilis was obtainable.

Each serum was examined for cell count after the method of Swift and Ellis, and for globulin by the method recommended by Ross Jones. The serologic examinations were made according to the original Wassermann technic, serial dilutions up to 1 and 2 c.c. being used. Recently the colloidal gold chlorid test has been employed in addition.

The percentage of cases showing involvement of the cerebrospinal system without clinical symptoms is as follows: primary, six cases with no involvement; secondary, twenty-seven cases, nine of which showed involvement, or 33⅓ per cent.; tertiary, five cases, two of which showed involvement, or 40 per cent., and latent, seventy cases, twenty-two of which showed involvement, or 31 per cent. Summing up these cases, we have, out of 108 cases of syphilis, thirty-three, or 30 per cent., which, although without definite clinical symptoms, showed early involvement of the nervous system. Surely this class of patients, if permitted to go untreated, will eventually show signs of degeneration as a result of their infection.

One eminent author[3] says that if dermatologists and genito-urinary surgeons were familiar with the early manifestations of nerve involvement they would uncover many cases of syphilis of the nervous system. This is undoubtedly true, and therapeutic attack begun early is now most promising of success. But what about the clinician who is unable to detect these early manifestations of cerebrospinal involvement?

Unfortunately, a large percentage of syphilitic patients are treated by members of the medical profession other than specialists. Often the diagnosis is delayed, and treatment is given with the object only of healing up lesions and securing a negative blood Wassermann reaction.

Today, syphilis exists everywhere and, if we read the statistics, we shall see that it bids fair to increase. The report of the United States Public Health Service, dated April 27, 1917, gives the following figures for syphilis and tuberculosis for the year 1916 for the city of New York, with an estimated population of 5,062,841: 20,128 cases of syphilis were reported, the rate being 3.592 per thousand, and 19,297 cases of tuberculosis were reported, with a rate of 3.444 per thousand. If we consider the difficulty of securing accurate data from the imperfect reporting of venereal diseases as compared with the highly efficient methods of reporting tuberculosis, the rate for venereal diseases is probably even greater.

What is going to happen to this vast army of syphilitics in the future?

Many observers have not the training or the skill to locate every minute nerve change; but a lumbar puncture, if made when the patient presents himself for examination, no matter how long previously he was treated and discharged, will reveal the true pathology as regards the cerebrospinal fluid. This is illustrated by Case 1.

CASE 1 (135).—A man came to my office one morning complaining of a slight urethral discharge. A slide was prepared, and he was instructed to urinate. This he said he could not do while I was in the room, so I went out. Returning in a few minutes, I noticed the lack of force of the urinary stream. I immediately asked him if he had ever had syphilis. "Oh yes," he said, "but I had a negative blood Wassermann." On further examination, the knee reflexes were found to be absent. This patient was strong and well, as far as he knew, and had never been sick in his life. The urinary symptoms were of such gradual development that they had attracted no attention. The spinal fluid examination revealed: cells, 122; globulin test, positive, and Wassermann reaction, positive.

With the discovery that active spirochetes can be recovered from the cerebrospinal fluid of patients suffering from cerebrospinal syphilis, ways and means of attacking the disease in the nervous system have been devised, and in some hands many of the methods have been fairly successful.

Most of the methods aim to introduce the specific agent or some modification thereof directly into the spinal canal. These methods at best, however, require special technic, and often after the most careful management, complications occur.

Having had considerable experience with the Swift-Ellis method and with that devised by Ravaut, I was reluctant to try these methods in early cases.

Few observers realize that to attempt intraspinal treatment in cases of secondary, tertiary and latent syphilis, and even in early tabes, is a mistake. In

* Read at the meeting of the Mississippi Valley Medical Association, Oct. 9-11, 1917.

1. Ogilvie, H. S.: Am. Jour. Syph., 1917, **1**, 509.
2. Corbus, B. C.: Cerebrospinal Examinations in "Cured" Syphilis, THE JOURNAL A. M. A., Aug. 15, 1914, pp. 550-552.
3. Fordyce: Med. Rec., New York, Sept. 30, 1916, p. 575.

1914 I[2] recommended that intensive intravenous injections should always be tried, especially in early cases, before intraspinal injections are resorted to. Sachs,[4] in a recent article, discusses the question of the therapeutic value of intraspinal injections. He reviews the situation impartially and comments on the failure of the intraspinal method.

Recently there has come under my observation a number of patients with slight symptoms referable to the nervous system in whom intraspinal treatment had been instituted in the form of mercurialized serum, with the result that complications more dangerous than the original symptoms arose.

Gilpin and Earley[5] believe that lumbar puncture, performed every week, or every two to three weeks, in order to reduce the pressure within the spinal column while intramuscular mercurial injections are being given, helps the mercury to pass into the cerebrospinal fluid.

Acting on this idea, I give intensive salvarsan injections combined with mercury rubbings in the following manner: Having satisfied myself by previous lumbar puncture as to whether or not definite or indefinite symptoms of subarachnoidal involvement are present, I give five doses of salvarsan, or some of the newer substitutes, in the course of two weeks. If the treatment is begun on Saturday, a second dose is given the next Wednesday, a third dose the following Saturday, a fourth dose the next Wednesday, and a fifth dose the following Saturday. The blood is examined at this time to see if arsenic is present. If so, it can be demonstrated by the Abelin test, which is as follows:

Reagents.—These are (1) resorcin, chemically pure; (2) hydrochloric acid, 20 per cent.; (3) sodium nitrite, 0.5 per cent.; (4) sodium hydroxid, 30 per cent.

Technic.—A 7.5 per cent. solution of resorcin is made up in the 30 per cent. sodium hydroxid. This can be kept as a stock solution. To 0.5 c.c. of cooled blood serum in a tube are added 8 drops of the hydrochloric acid and then 10 drops of the sodium nitrite solution, all of which are thoroughly mixed. In another tube is placed about 1 c.c. of the resorcin solution, to which is added, drop by drop, the serum treated with the acid and nitrite solution. In the presence of salvarsan or a changed amino derivative, a beautiful rose red contact ring appears most definitely in from one to two minutes. Normal serum gives a yellow ring.

One hour after the last injection, the patient is taken to the hospital, and lumbar drainage is performed. By this I mean the withdrawal of from 20 to 30 c.c., according to the pressure.

The great difficulty, as we all know, has been our inability to get salvarsan into the subarachnoid space in sufficient quantities to destroy the spirochetes.

It has been shown that salvarsan passes into milk secreted by the lacteal glands. Why, then, will it not pass through the choroid plexus if conditions are made ideal? The subarachnoid fluid is said to be secreted from the choroid plexus. If the fluid in the space is withdrawn in excess, the plexus must replace the fluid from the blood stream, which is saturated with salvarsan. This seems to me an ideal way to attack the infection. It compels the plexus to refill the canal from a blood stream saturated with salvarsan.

The patients are kept in bed for thirty-six hours with the foot of the bed elevated for twenty-four hours of that period.

In about ten days after this procedure, mercury rubbings are begun and continued for from three to four months. Then the salvarsan is again administered as previously described, lumbar drainage is performed, the fluid is examined, and the result is compared with the first examination.

It is my plan to continue the foregoing treatment twelve months after obtaining a negative spinal fluid, that is, through two series of salvarsan injections of five each and ten months of rubbings.

On alternate nights, during the treatment with mercury, the patient is rubbed on the chest and the back. Twice a week a hot bath is given, and the ointment all scrubbed off with soap and water. The patient is instructed to buy a tight-fitting undershirt, cut out the sleeves and wear this all the time under his nightshirt and also under his daily underwear, taking it off only when he bathes. This shirt rapidly fills with mercury and becomes a veritable pad, keeping the body continually in contact with the mercury.

Then, too, it is believed that by wearing this mercurialized shirt, the patient receives part of the mercury by inhalation. As he wears it continuously, night and day, some of the mercury is volatilized at body temperature, so that he has the additional advantage of mercury inhalation, with absorption through the skin. After a day or so, the odor, which at first may be very annoying, is hardly noticeable.

This shirt should be worn by the patient for at least six weeks. There is no objection to his taking a daily bath, but he is not permitted to wipe the mercury ointment from his chest and back. He should pat himself dry with a towel.

During the treatment with mercury, it is absolutely necessary to keep all fruit, fruit acids and buttermilk out of the patient's diet. If this precaution is strictly observed, with proper mouth hygiene, the gums will remain in a perfectly healthy condition. Equal parts of sodium bicarbonate and sodium chlorid make an excellent tooth-powder, which will also help to preserve the gums.

Occasionally, after six weeks of mercury rubbings, iodids are substituted for a month; then the mercury rubbings are resumed. I shall have no argument with those who prefer mercury injections to mercury rubbings. It is true that the rubbings are dirty, but in my hands this form of administration has been most effective.

REPORT OF CASES

In the following three cases, the intensive treatment was carried out. All showed stubborn infections, and a large amount of salvarsan was given, as will be seen from the records.

Case 3 (30).—H. D. H. manifested symptoms of secondary syphilis with spinal fluid involvement. The blood Wassermann reaction was positive. Treatment was begun, March 14, 1914. The patient received fourteen full doses of 0.6 gm. of salvarsan during a period of nine months, after which he showed a negative spinal fluid. Later he received two additional salvarsan injections. Since that time he has maintained a negative spinal fluid reaction without further treatment. Examinations were made, Nov. 10, 1914, Sept. 24, 1915, and May 18, 1917.

Case 3 (291).—C. G. manifested symptoms of secondary syphilis with spinal fluid involvement. The blood Wassermann reaction was positive. Treatment was begun, Feb. 3, 1913. This patient received twenty-nine doses of salvarsan during a period of three years and one month. He was one of the first treated by the intensive method, and mercury

4. Sachs, Bernard: Truth and Intraspinal Injections in Treatment of Syphilis of Nervous System, The Journal A. M. A., Sept. 1, 1917, p. 681.

5. Gilpin, S. F., and Earley, T. B.: Drainage of Cerebrospinal fluid as a Factor in the Treatment of Nervous Syphilis, The Journal A. M. A., Jan. 22, 1916, pp. 260-262.

rubbings were used in conjunction with the salvarsan. He showed a negative spinal fluid reaction in January, 1916. One year later, January, 1917, without further treatment, he still had a negative reaction.

CASE 4 (32).—G. K. L. manifested symptoms of secondary syphilis with spinal fluid involvement. The blood Wassermann reaction was positive. This case is most interesting, as the patient was over 50 years of age when he contracted the infection, and the diagnosis was delayed until he was in the full secondary stage. Treatment was begun, March 29, 1912. During a period of two years and seven months, he received twenty-two injections of salvarsan, together with the mercury rubbings. A negative spinal fluid test was obtained, Oct. 9, 1914. He maintained a negative serum reaction until almost one year later, Aug. 10, 1915. It is now three years since he has taken any treatment, and he writes me that he is in the best of health.

In the following three cases, spinal drainage was added to the intensive form of treatment.

CASE 5 (135).—E. A. presented evidence of tabes with spinal fluid involvement. He was not aware of the spinal fluid involvement. He was feeling perfectly well. Treatment was begun, June 28, 1915. Spinal fluid examination revealed 122 cells per cubic millimeter, globulin test positive, and Wassermann reaction positive. He received five injections of 0.6 gm. salvarsan, followed by a spinal drainage. Then for three months mercury rubbings were employed. Following this, he received another five injections of salvarsan, with the same dosage, and another spinal drainage. Examination of the spinal fluid revealed 10 cells per cubic millimeter, the globulin test negative and the Wassermann reaction negative.

It took just seven and a half months of this intensive treatment, comprising ten full doses of salvarsan, with continuous mercury rubbings, to bring about the serologic change. The treatment was continued another year, ten more injections of salvarsan being given. The examination of the spinal fluid, Jan. 29, 1917, revealed 5 cells per cubic millimeter, the globulin test negative and the Wassermann reaction negative. In all, the patient received twenty doses of salvarsan. The spinal fluid Wassermann reaction was negative in six months, but the treatment was continued twelve months longer.

CASE 6 (38).—R. S. presented evidences of gumma of the testicle with spinal fluid involvement. The blood Wassermann reaction was positive. Examination of the spinal fluid revealed 30 cells per cubic millimeter, the globulin test positive and the Wassermann reaction positive. Treatment was begun, Nov. 28, 1916. The patient received five doses of salvarsan, of 0.6 gm. each, after which a spinal drainage was performed. Examination revealed no marked change in the spinal fluid. Then he had five months of the mercury rubbings, and another five doses of salvarsan, with the same dosage. This was followed by a spinal drainage. Examination of the fluid at this time revealed 3 cells per cubic millimeter, the globulin test negative and the Wassermann reaction negative. The Wassermann test made on the blood at this time was also negative.

The patient showed a negative condition, and it took just ten doses of salvarsan and the mercury rubbings to bring about the change of the spinal fluid after six months of treatment. He is still under treatment.

CASE 7 (121).—L. W. K. presented evidences of tabes with spinal fluid involvement. The blood Wassermann reaction was negative. The spinal fluid examination revealed 68 cells per cubic millimeter, the globulin test positive and the Wassermann reaction positive. Treatment was begun, Nov. 15, 1916. The patient received five doses of salvarsan, of 0.6 gm. each, followed by a spinal drainage, which revealed no marked change, and four months of mercury rubbings. Then he was given another five doses of salvarsan and another spinal drainage. Examination of the spinal fluid at this time revealed 4 cells per cubic millimeter, the globulin test negative and the Wassermann reaction negative.

In six months, this patient obtained a complete negative condition of the spinal fluid after ten doses of salvarsan, together with mercury rubbings. He, also, is still under treatment.

It is my purpose to give in a future paper a detailed account of all cases, showing the advantage of the intensive use of salvarsan and spinal drainage over the simple intensive form of treatment.

CONCLUSION

In cerebrospinal syphilis the ideal method of prophylaxis consists in attacking the disease during the primary stage. If correct diagnosis is made and energetic treatment instituted at this period, there should be no further signs of the infection, and subarachnoid involvement would be unheard of. The general aim in treatment, especially among otologists, laryngologists and ophthalmologists, seems to be the healing of the superficial lesions only.

Lumbar puncture, with negative spinal fluid findings, is demanded in every case as final evidence of cure, no matter how energetically the treatment has been carried out.

As a check on possible future complications involving the nervous system, lumbar puncture, with spinal fluid examinations, is demanded in every patient who presents himself for treatment after the primary period.

In view of results of my experience, extending over a year, with intensive salvarsan treatment and mercury rubbings, with spinal drainage, it is my belief that these constitute the most effective mode of treatment, at the same time causing the least danger to the patient.

30 North Michigan Avenue.

AN EXPERIMENTAL STUDY OF SURGICAL SHOCK*

PRELIMINARY REPORT

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ROBERT GESELL, M.D.
HERBERT S. GASSER, M.D.
AND
B. LANDIS ELLIOTT
ST. LOUIS

"Shock," which we arbitrarily define as a reduction of the arterial pressure to or below 50 mm. of mercury, together with the other usual signs of that condition, has been produced in the dog by (1) exposure and manipulation of the abdominal viscera; (2) a two hour partial occlusion of the inferior vena cava[1]; (3) partial occlusion of the thoracic aorta, lasting two hours; (4) twenty minute intravenous injections of 1:1,000 epinephrin,[2] and (5) the injection into the liver, via the splenic vein, of a suspension of lycopodium spores. Arterial pressure, venous pressure, jugular and portal (in a few experiments), and vasomotor tone have been followed. For the determination of vasomotor tone, a modification of the method used by Bartlett[3] has been employed: From time to time the rate of the flow is determined of salt solution under constant pressure, one high enough to minimize the effects of changing venous and collateral pressures, through a part of the

* From the Physiological Laboratory of the Washington University Medical School.
* Undertaken as a part of the cooperative investigation started by the Committee on Physiology of the National Research Council, and participated in by the entire staff of the Department of Physiology.

1. Janeway and Jackson: Tr. Soc. Exper. Biol. and Med., 1915, **12**, 193.
2. Report of British Committee: Brit. Med. Jour., 1917, **1**, 381.
3. Bartlett: Jour. Exper. Med., 1912, **15**, 415.

circulatory system for the time momentarily isolated for the purpose in such a way as not to injure the nerve supply of that part. These injections ("inflows") have been made in the main into the femoral artery; a few into a mesenteric and into the hepatic artery.

At the close of very protracted experiments, lasting, for example, six or more hours, the inflow rate may not be any faster than the normal initial inflow rate, and yet may show little or no mortal acceleration. The cause of this phenomenon is not yet clear. Presumably it is due in part, at least, to the development of a high state of local tone in the larger arteries, and possibly partakes of the nature of the postmortem contraction described by MacWilliam.[4]

SHOCK BY EXPOSURE OF THE ABDOMINAL VISCERA

From two to five hours of exposure and manipulation usually are necessary to reduce the pressure to 50 mm. of mercury. This does not include the time preceding the opening of the abdomen. The experiments usually occupy from about six to eleven hours each. The arterial pressure may be but little affected for several hours. During this time the vasomotor tone is usually somewhat increased, though often it is not outside of the normal range. The tone usually begins to decrease (inflow to increase) as the arterial pressure begins to fall, or to fall more rapidly, and it almost invariably passes below the normal level by the time the arterial pressure reaches shock level (50 mm. of mercury); that is to say, the inflow rate under the constant high injection pressure is then either normal or faster than normal.[5] As has been said, there often is very little further dilatation as the animal dies, though not infrequently there is then a slight constriction (asphyxial?) followed by a slight dilatation, indicating that the vasomotor center, even at the end of long experiments, may not be entirely unresponsive or inactive. On account of the peculiar reaction of the blood vessels at this time, however, it is impossible to form any definite opinion as to the extent of this terminal reserve. Portal venous pressure usually steadily falls throughout the experiment. The jugular pressure (in one experiment) showed no striking change.

THE PRESENCE OF THE ABDOMINAL VISCERA NOT ESSENTIAL FOR THE PRODUCTION OF SHOCK

After the removal of the abdominal viscera, shock develops in from three to five hours. If allowance is made for the greater duration of the preliminary operation, which, as a matter of fact, involves considerable manipulation of the viscera, the time required for the onset of shock certainly is no longer than in uneviscerated animals. The arterial pressure falls in very much the same way as in the uneviscerated. Vasomotor tone, at first, is markedly increased, but as a rule has fallen well below normal by the time shock pressure develops.

SYMPATHETICLESS DOGS

In two animals the abdominal sympathetic chain was removed, and the splanchnic nerves cut several weeks before the experiment. Shock pressure developed in one and one-half and three hours, respectively, after exposure and manipulation of the abdominal viscera. There were no changes in the rate of the femoral inflow. Shock apparently came on more rapidly in the absence of vasoconstrictor activity than in its presence, though it must be borne in mind that these animals were not so vigorous as are animals not operated on previously.

SHOCK BY PARTIAL OCCLUSION OF THE INFERIOR VENA CAVA

The observations of Janeway and Jackson were verified in almost every particular. In addition it was shown that during occlusion, vasomotor tone is usually markedly increased at first and then diminishes, so that before deocclusion (that is, before two hours have elapsed) it is always well below normal. If the arterial pressure improves with deocclusion, the tone may increase; but then it usually does not reach the normal level, and decreases again as the animal goes into shock. With death a further, usually considerable, dilatation occurs. During shock, therefore, vasomotor tone is usually well below normal but not lost. Portal venous pressure may be but very slightly increased by a grade of cava occlusion that eventually produces shock. For example, in one experiment the portal pressure was increased from 8 to only 10 mm. of mercury.

SHOCK BY OCCLUSION OF THE THORACIC AORTA

An obstruction, lasting two hours, of the thoracic aorta just beyond the arch that holds the peripheral arterial pressure at 30 or 40 mm. of mercury usually leads to shock, and usually within two hours after deocclusion, although, as after deocclusion of the vena cava, the arterial pressure after deocclusion of the aorta may for a time be almost as high as before occlusion. Vasomotor tone is markedly decreased during the period of compression, presumably as a result of the improved circulation in the brain. It increases beyond the normal on deocclusion, to decrease again as shock pressure develops, but does not pass below normal until the arterial pressure reaches, or has for some time been below, the shock level. With death, a further and very marked dilatation develops. In no other type of shock does the vasomotor mechanism possess as much residual terminal tone.[6] Portal venous pressure is below normal, excepting, perhaps, momentarily at the time of deocclusion. The jugular pressure does not change materially.

SHOCK BY EPINEPHRIN

Epinephrin administered as described by the British Committee[2] does not often lead to shock. As a rule those injections of epinephrin that do lead to shock cut down the inflow, through peripheral action, almost to zero for a considerable period. Contrary to recent statement,[7] epinephrin contracts the intestinal as well as the somatic arteries, and in these doses it may affect the large arteries (mesenteric, femoral) as well as the arterioles. The inflow method in these experiments gives no clue to the degree of activity of the vasomotor center other than to indicate that it is at least partially active to the end. Portal venous pressure is markedly increased at first, but rapidly falls, and may be below normal long before the animal goes into shock. In many instances death seems to be due to action of the epinephrin on the medullary centers and on the heart, and not to shock; for the heart or respiration may sud-

4. MacWilliam: Proc. Roy. Soc., 1902, **70**, 109.

5. Normal vasomotor tone in the presence of a subnormal arterial pressure would result in tissue anemia and pallor.

6. More recent experiments indicate that the vasomotor centers hold up better in an animal anesthetized with morphin and ether than with ether alone. Inasmuch as morphinized animals require less ether, we are inclined to attribute the difference to the effect of the ether on the centers.

7. Hoskins and Gunning: Am. Jour. Physiol., 1917, **43**, 399.

denly stop before shock, or even a particularly low arterial pressure, has developed.

SHOCK BY PLUGGING THE PORTAL RADICLES IN THE LIVER

In order to determine whether a portal obstruction resembling in character that which a hepatic constriction would develop will lead to shock, graded injections of lycopodium spores were made into the vena gastrolienalis of the dog toward the liver. A dose that completely obstructs the portal circulation at first raises the portal pressure almost to the arterial pressure. But, presumably through the opening of collateral paths, the portal pressure soon falls until it becomes somewhat less than twice the normal, and this level is then maintained with little change until the animal begins to die. Until the collateral circulation is established, vasomotor tone is markedly increased, but then becomes practically normal. The arterial pressure is falling during this period, and soon arrives at the vicinity of 50 mm. of mercury. Some time later (two and one-half hours in one experiment), vasomotor tone begins to give way, the arterial pressure falls further, and the animal dies, whereupon the "inflow" undergoes a further and rapid increase. The anesthetic can never be completely removed, but toward the end only the lightest anesthesia is needed. Jugular pressure is not materially affected. Doses of lycopodium that do not produce complete obstruction and which, after the establishment of the collateral circulation, almost double the portal pressure, may be sustained indefinitely (four and one-half hours), and may only temporarily disturb the arterial pressure and vasomotor tone.

The rabbit, presumably on account of its longer intestine, is more susceptible to the lycopodium injections. A dose that almost doubled the portal pressure, however, was withstood perfectly by one animal for two hours.

SUMMARY AND COMMENT

Shock evidently may develop during or some time after markedly interfering with the blood supply to a considerable part of the body. It can be brought on by temporary partial obstruction of the inferior vena cava and of the thoracic aorta, by administration of doses of epinephrin that practically stop the circulation for long periods of time, and by the complete plugging of the portal capillaries. Failure of the vasomotor center in shock so produced is not the main cause of the condition, for at the time shock pressure first develops, vasomotor tone may be low, as in shock produced by occlusion of the vena cava; or it may be normal, or even above normal, as in shock produced by occlusion of the aorta. Still, it is important to bear in mind that a vasomotor center that holds the vessels merely to their normal caliber at a time when the arterial pressure is subnormal is not in normal condition. A normal center, under such circumstances, would hold the arteries to less than their normal size. But under any circumstances, the tone of the center falls below normal, if it is not already below normal, very shortly after shock pressure develops, as a result either of fatigue or of deficient blood supply to the center, both consequent, we believe, on the low blood pressure. The tone of the center is never entirely lost until the animal dies. Furthermore, sudden failure of the medullary vasomotor center in an otherwise normal animal apparently does not immediately lower the arterial pressure to the shock level. Increased portal pressure is not the cause of shock as produced by obstruction of the vena cava, or of the aorta, or by epinephrin; for the portal pressure may not be raised at all (as in occlusion of the aorta), or it may be raised only temporarily (as in shock by occlusion of the cava and by the injection of epinephrin). Furthermore, by the injection of lycopodium into the portal capillaries, the portal pressure can be raised as high as or even higher than it may be raised by the aforesaid methods, and yet may not lead to shock. In the dog, at least, obstruction of the portal capillaries to lead to shock must be practically complete; even the rabbit may withstand, almost with impunity, a marked increase in portal pressure.

We conclude, therefore, that by these procedures processes are started peripherally that eventually lead to shock. It is conceivable that shock that is brought on by exposure of the abdominal viscera also owes its origin to peripheral circulatory or nutritional disturbances of the same nature, but limited in this case to the organs maltreated. In the latter type of shock the portal pressure is not increased, and the vasomotor center has begun to fail, by the time the arterial pressure has fallen to 50 mm. of mercury. Before this pressure is reached, the arterioles may be constricted somewhat more than normally. Evidently, therefore, the question as to whether or not the arterioles are actively constricted in this type of shock depends largely on the pressure criterion of shock that is adopted. Indeed, it is possible that if shock pressure could have been induced more rapidly by this procedure, the center might have been found normally or even supernormally active at the time the animals went into shock. Complete vasomotor failure occurs only after death, though the tone residuum seems to be smaller in shock brought on by exposure than in other types of shock.

Obstruction of the portal area alone does not bring on shock as rapidly as an obstruction of the inferior vena cava of the same grade, if the level to which the portal pressure is raised by these procedures may be regarded as a criterion of the grade of obstruction. Presumably, therefore, contrary to Mann's[8] contention, the abdominal area is scarcely more potent in the production of shock than other parts of the body of comparable vascularity. This is indicated also by the fact that shock develops in eviscerated animals as rapidly as, indeed even more rapidly than, in normal animals.

We conclude, therefore, that the sole primary disturbance that leads to shock is not the retention of blood in the veins and capillaries of the splanchnic area, nor failure of the vasomotor center, two views that are quite prevalent at the present time. So far as we have gone, however, our results are not incompatible with the view, now apparently in the ascendency,[2] that the reduced pressure is to be attributed to a reduction in the effective volume of blood. Indeed, practically all of our results can be made to fit into this interpretation. But if this is the correct explanation of shock, our experiments thus far have thrown no light on the mechanism of blood depletion, or on the location of the displaced blood.

Of the five methods by which we have succeeded in producing shock, four, namely, obstruction of the cava and of the aorta, injection of epinephrin, and complete portal obstruction, certainly accomplish this by markedly reducing for some time the blood supply to a considerable part of the body; and it is not impossible that

8. Mann: Bull. Johns Hopkins Hospital, 1914, **25**, 205.

the fifth method (exposure of the intestine) works in a similar manner, the reduced blood supply here possibly being due to the processes associated with the onset of the first stages of inflammation.[9] One of these methods (obstruction of the aorta) undoubtedly leaves practically unaltered the functional capacity of the brain, the spinal cord, the heart, the vasomotor mechanism, etc. For these reasons we have developed the following working hypothesis:

Long lasting deficient blood supply starts a more or less extensive reaction, possibly of the nature of an inflammation. Engorgement of the small veins and capillaries,[10] and transudation of blood plasma are two of the early consequences of the reaction, and account for the diminution in the effective blood volume of shock. If acidosis occurs in shock, as reports from the front now seem to indicate, might not this acidosis also be the result of the deficient oxidation which deficient blood supply undoubtedly has in its train?

While it is possible so to induce shock (for example, by obstruction of the aorta) as to leave unreduced the functional capacity of many of the organs, we do not entirely agree with the view now current that in shock the heart, the vasomotor mechanism, etc., are always normally active. From the work we have thus far done, we have gained the impression that under the influence of the low blood pressure of shock the heart, while still capable of considerable exertion, has not the normal reserve. Neither does the vasomotor center respond as readily or as markedly to reflex stimulation; it may not be able to hold the arterioles to a normal caliber under a normal pressure, and seems to be set so as to maintain a new and low pressure level, so that in plethora produced by the intravenous injection of glucose,[11] for example, the increased output of the heart fails to raise the arterial pressure materially. We have evidence also that in shock the respiratory center is sluggish, and is working very close to the limit of viability.

Reports from the front[12] indicate that "the occurrence of shock in the wounded soldier when seen soon after the infliction of his wound is exceedingly rare"; it usually appears in patients giving "a history of great exposure to cold and to fatigue during the time which elapsed from the receipt of their injury, to their arrival in the hospital." Such views lend strength to the opinion that laboratory shock is not very different from shock as seen in war surgery. On the basis of such reports, we venture to suggest, as the causative factor of shock, reduced circulation brought about possibly through the action of pain stimuli, and of a certain amount of hemorrhage, on the vasoconstrictor mechanism, this reduced circulation starting in its train such events as follow, for instance, the injection of epinephrin, and the temporary partial occlusion of the aorta, or of the vena cava.

We have not yet succeeded, through stimulation of the vasoconstrictor center, either reflex or direct, in inducing in animals a peripheral constriction of the duration that is necessary, in our experience with other methods, to start the animal on the road to shock. Possibly this can be accomplished only in the conscious animal, and therefore cannot readily be done in the laboratory.

9. Erlanger: Paper read at Symposium on Shock, American Association for the advancement of Science, Washington, May 25, 1912. Henderson: Am. Jour. Physiol., 1917, **42**, 587.
10. Bier: Virchows Arch. f. path. Anat., 1897, **144**, 256.
11. Erlanger, Joseph, and Woodyatt, R. T.: Intravenous Glucose Injections in Shock, THE JOURNAL A. M. A., Oct. 27, 1917, p. 1410.
12. Archibald and McLean: Ann. Surg., 1917, **66**, 280.

INTRASPINAL TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM

ANOTHER VIEW

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In a recent address, Sachs[1] throws discredit on the principles and practice of intraspinal injections in the treatment of syphilis of the central nervous system. It had been arranged that the other side of the subject should be presented by me during the session at which Dr. Sachs made his address, but orders into active military service prevented.

It is naturally impossible to refer to the records and notes on the cases under my care for the past eight years, so that this communication must necessarily be in general terms. In a recent article,[2] however, are published the details in the treatment of cases which represent examples of practically all stages of the disease. As I was naturally interested in the welfare of my patients, both the bedside and the laboratory features of each case were accurately recorded. To neglect either one is not in accord with the modern tendency in clinical medicine. To disregard the laboratory picture of the disease is at least reactionary, for most of our knowledge of the action of drugs has been the result of laboratory investigation. In syphilis, the laboratory evidences of disease are of paramount importance, and changes in them give us a valuable measure of the efficacy of our therapeutic measures. In them also the personal element in measuring change is reduced to a minimum.

In considering the treatment of syphilis of the central nervous system, it is not advisable to throw all the various forms of the disease into one class and have a hard and fixed method of procedure for all. It is always well to separate, as far as possible, the symptoms that are the result of active disease from those that are the result of scars. Obviously, one does not expect to restore scarred nerve tracts or centers. The elimination of active syphilitic foci and the arrest of a progressive degeneration are the objects of our therapeutic efforts.

In the large majority of the tabetics in whom the Wassermann reaction was rendered negative in the blood and spinal fluid, there has been no progressive downward course as determined in periodic clinical examination. On the other hand, in those tabetics in whom it was impossible to influence appreciably the abnormal laboratory findings, the disease was often progressive. The cerebrospinal fluid from these resistant cases often showed a gold curve of the paretic type, and probably the persistence of the Wassermann reaction was due to the paretic nature of the disease. It is my experience, in common with most other workers, that our therapeutic efforts in paresis lead to little more than an increase in the number and length of the remissions. The disease usually terminates fatally. The period of useful life, however, seems to

1. Sachs, Bernard: Truth About Intraspinal Injections in Treatment of Syphilis of Nervous System, THE JOURNAL A. M. A., Sept. 1, 1917, p. 681.
2. Swift, H. F.: Response in Treatment of Syphilis of Central Nervous System, Am. Jour. Syph., 1917, **1**, 524.

be lengthened, and the period of hospital confinement shortened.

In considering intraspinal treatment, it is well to differentiate sharply between the injection of salvarsan or neosalvarsan in amounts or concentrations that are injurious to the spinal cord, and the injection of serum, perhaps reinforced with a fraction of a milligram of salvarsan, which is practically never followed by any bladder or rectal disturbance. Although such serum contains only minute quantities of salvarsan, the fact that it is definitely spirocheticidal has been established by several workers. I have shown that the intraspinal injection of normal serum is at times followed by a diminution in pleocytosis and in the strength of the Wassermann reaction. In some cases that were stationary under this form of treatment, there was a further improvement when "autosalvarsanized serum" was substituted for normal serum. Hence we have two favorable factors, namely, normal serum and spirocheticidal substance, at work as the result of the injection of a serum which does not injure the delicate central nervous tissues.

So far as I am aware, nothing has been discovered in the recent work on the anatomy of the subarachnoid space and the physiology of the cerebrospinal fluid that is in any way contradictory to the principle of subarachnoid injection of therapeutic agents. While there has been an occasional report of the finding of arsenic in the spinal fluid after the intravenous administration of salvarsan, by far the majority of investigations have yielded negative results. Therefore, we are justified in concluding that the choroid plexus and the capillaries are usually effective barriers to the passage of arsenic into the cerebrospinal fluid.

In Weed's work on the formation and elimination of cerebrospinal fluid, even though he proved that the direction of the flow was outward from the perineuronal spaces, he did not prove that there was not a free circulation of the fluid. Blackfan and Dandy showed that, after intraspinal injections of finely divided carbon, there was a rapid distribution of the particles throughout the subarachnoid space. They showed also that phenolsulphonephthalein injected intraspinally was demonstrable in the fluid obtained a few minutes later from the ventricles, and that the same dyes could be quickly detected likewise in lumbar puncture fluid after injection into the lateral ventricles. From this evidence we should expect a fairly rapid distribution throughout the subarachnoid space of serum injected intraspinally.

The statement attributed by Dr. Sachs to Amoss, that the virus within the brain and spinal cord in poliomyelitis cannot be reached by intraspinal treatment alone, does not invalidate the principle of intraspinal injection in either syphilis or poliomyelitis.[3] It simply shows that in such diseases it may be well to attack the pathologic condition both through the blood stream and through the cerebrospinal fluid.

In fact, I never contended that intraspinal treatment *alone* was the best or the ideal treatment of syphilis of the central nervous system. The method was advocated only as an addition to other therapeutic measures. In my experimental work, it was necessary to eliminate all other forms of treatment in order to demonstrate that this form, of itself, was of decided value. This I feel I have demonstrated. The question is not one of intraspinal versus intravenous treatment, but of the value of the two methods combined. I have seen patients that did not respond to the intensive general treatment show improvement when intraspinal injections were added to the general treatment. I have also seen patients that showed only moderate improvement under intraspinal treatment alone improve more rapidly when intravenous treatment was added.

Intraspinal injections are not advisable in all cases, because not infrequently general treatment alone is sufficient. But when the general treatment is shown to be only moderately satisfactory, the addition of intraspinal injections is often of decided value.

Furthermore, I do not pretend that the present method is the final one. Doubtless, we may look forward to the time when we shall have drugs that are more efficient than salvarsan when applied both intravenously and intraspinally; but until that time has arrived, we are both obligated to and justified in continuing the use of procedures of determined therapeutic value.

3. In fact, I am not aware that Amoss has published such an exclusive or dogmatic statement. The reference would appear really to be to the combined intraspinal and intravenous serum treatment of poliomyelitis. Since epidemic poliomyelitis is a systemic as well as a special nervous infection, the combined treatment is advocated, not because the intraspinal injections are incapable of reaching all parts of the nervous organs, but because it is desirable to generalize the distribution of the immune serum throughout the body in the shortest space of time.

PHYSICALLY HANDICAPPED CHILDREN

RECOMMENDATIONS FOR OUTDOOR, FRESH-AIR AND OPEN-WINDOW CLASSES *

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The beneficial results obtained through open-air treatment of respiratory diseases, particularly pulmonary tuberculosis, have influenced educational hygienists, as well as physicians, to adopt similar methods for the care and treatment of other disabilities common among schoolchildren.

Among the 800,000 children attending the New York City public schools there are hundreds of physically handicapped children, including those affected with active pulmonary tuberculosis, and with bone, skin and glandular tuberculosis. There are also many pretuberculous, anemic and crippled children, and cardiac cases. As these children cannot attend the regular classes, provision must be made for their comfort, health and progress in school by some process of segregating them into special classes, of providing special classroom and personal equipment, and a relaxed curriculum.

Because of the varied types of physical defects, and of the different kinds of treatment necessary, these children cannot be grouped in any one type of classroom. Since this is true, we believe in the segregation of groups of physically handicapped or subnormal children, according to the type of case, into (1) outdoor classes, (2) fresh-air classes, and (3) open-window classes, as outlined in the accompanying

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table. A system of segregation which partly embodies the recommendation contained in this article is at present in operation in the public schools of New York City.

OUTDOOR CLASSES

All cases of active pulmonary tuberculosis should be placed in classrooms of this type. A distinction should be made, however, between cases of active pulmonary tuberculosis and all other types of active tuberculosis.

Classrooms for children suffering from active pulmonary tuberculosis should be located on ferry boats, in parks, on piers, on hospital roofs, etc., but never in school buildings. In addition to the outdoor classrooms, provision should be made for a heated indoor lunch room on the same floor. When hospital roofs are utilized, stair climbing should be eliminated, through the use of an elevator. These classes are situated outdoors, and the outdoor temperature and adverse weather conditions may be partly regulated by movable glass wind and storm shields, which permit the passage of sunlight. Under the systems in use at the present time, canvas curtains and other cloth materials are used for wind shields. These are unhygienic from several points of view. They do not transmit sunlight, or prevent drafts, and they become dusty from prolonged use.

RECOMMENDATIONS FOR OUTDOOR, FRESH-AIR AND OPEN-WINDOW CLASSES

Type of Classroom	Special Groups	Type of Case	Temperature	Type of Structure: Structure	Location	Ventilation	Heating	Type of Room Equipment	Type of Personal Equipment
I Outdoor	1	Pulmonary tuberculosis (active)	Outdoor temperature regulated by glass storm shields	Outdoor room; no walls; movable glass wind and storm shields; also a warm indoor lunch room	On ferry boats, piers, hospital roofs, in parks, etc., but not in public schools; stair-climbing to be avoided	Direct	No artificial heat	A specially constructed adjustable-movable chair resembling a Morris chair with desk attachment, rendering but one furniture equipment necessary for sitting and sleeping purposes; this is an evident economy; at present, desks, seats and cots are used	Wind-proof outer garment, with hood attachment — an outfit which may be easily washed so as to be sanitary Foot covering—Sitting out canvas-covered knee boots with felt insoles Army blankets—For use on very cold days, or when sleeping Bloomers — For additional warmth, if necessary, the girls wear bloomers under their skirts Sweaters, coats, caps and mittens are provided by the children, since these are articles of clothing commonly in use by all
II Fresh-air	1	The pretuberculous, i.e.: (1) Children exposed daily to tuberculosis in their homes (2) The so-called malnutrition and anemic type (3) Gland and skin tuberculosis	Not higher than 50 F.	Indoor room; specially constructed pivoted windows, so as to admit as much fresh air as possible without drafts	Corner room southern exposure, not higher than one flight	Direct	1. Artificial heat	Same as outdoor classroom	Same equipment as outdoor classroom
	2	Pulmonary tuberculosis (arrested)					2. Artificial heat		
III Open-window	1	Normal children attending regular classes	From 50-60 F.	Open window with specially constructed window ventilators	1. Any floor	1. Direct	1. Artificial heat	1. Regular classroom equipment	Sweaters, coats, leggings, mittens, caps, and bloomers for the girls
	2	Subnormal children, i.e.: (1) Children discharged from fresh-air classes (2) Children predisposed to respiratory diseases other than tuberculosis (3) Possible cardiac cases: i.e., doubtful murmurs, mainly functional (4) Mild chorea cases (5) Selected organic cardiac cases			2. Any floor	2. Direct	2. Artificial heat	2. Regular classroom equipment	
	3	Cases of organic cardiac disease in which further school segregation and prophylactic care are indicated			3. Not more than one flight	3. Direct	3. Artificial heat	3. Special equipment as in fresh-air class	
	4	Classes for cripples: A. (1) Cripples, nontuberculous, poliomyelitis cases, etc. (2) Cardiac cases in which school transportation is indicated B. Cripples; bone tuberculosis of all types			4. Not more than one flight	4. Direct	4. Artificial heat	4. Special adjustable equipment	

Since body heat must be provided through the child's own activities, not only should there be sufficient space for classroom activities and exercises through the use of movable furnishings, but the personal equipment of the child should permit unhampered activity. For these reasons, movable chairs should replace fixed desks and seats. A specially constructed chair, now in process of construction, is recommended. It resembles a steamer chair or Morris chair with a desk attachment. It is adjustable, and furthermore, it can be used for sleeping purposes, rendering necessary

only one set of classroom furnishings. This arrangement is a distinct advantage to the physical well-being of the child, as well as an economical provision. In the planning of classroom equipment, it is essential to take into account the need of a period for rest or sleep immediately after the noonday meal, a health measure which prominent specialists recommend for physically handicapped children, such as those suffering from carditis and tuberculosis. A careful consideration of the dietary of the physically handicapped child, both at school and at home, is of prime importance, and necessitates home visiting on the part of the teacher and the school nurse.

For the personal equipment, certain essential garments and coverings are recommended. This includes a wind-proof outer garment with hood attachment, an outfit easily washed, and therefore sanitary. Over the shoes a foot covering consisting of sitting-out canvas-covered felt knee boots with felt insoles is worn. These are warm and well ventilated, in contrast to the rubber arctics sometimes worn, which make the feet cold and damp by causing excessive perspiration.

An army blanket should be used on very cold days, or when the child is sleeping. It is hygienic because it is easily cleaned. The sleeping bag now commonly in use limits the physical activity of the child, and is a menace, because it rapidly becomes unhygienic and hazardous from the standpoint of dust, vermin and contagion, and, in addition, is difficult to clean. Furthermore, this cumbersome, immobilizing equipment is a real danger during fire drills and other emergencies.

Bloomers should be provided for additional warmth if necessary, to be worn under the girls' skirts. These may be made in the sewing department of the school. Sweaters, coats, caps and mittens should be provided by the children, since these are articles of clothing commonly in use by all.

It is evident that this type of personal equipment furnishes sufficient warmth, even on the coldest days, and allows the child opportunity for unhampered activity and physical training, besides being a great asset in times of fire drill and other emergencies.

FRESH-AIR CLASSES

Two special groups of physically handicapped children are included under this classification. The first group includes the pretuberculous children, that is to say, those exposed daily to tuberculosis in their homes, those suffering from malnutrition or anemia, and those suffering from gland and skin tuberculosis. The second group consists of children in an arrested stage of pulmonary tuberculosis.

The fresh-air classroom should be an indoor room located not higher than one flight, in order to eliminate excessive climbing of stairs for physically handicapped children. Preferably, it should be a corner room with a southern exposure, provided with specially constructed pivoted windows, to admit as much fresh air as possible without draft. Artificial heat should be available, but care should be taken to prevent the temperature from exceeding 50 F. The same type of classroom and of personal equipment recommended for use in the outdoor classrooms should be used in the fresh-air classrooms. A lighter weight personal outfit may be used, because of the higher temperature of the rooms. Similar methods should be observed in regulating the diet and periods of rest for children in these classes.

OPEN-WINDOW CLASSES

Four special groups are included in this classification. The first is made up of the normal children attending regular classes. The second includes physically subnormal children, those discharged from fresh-air classes, those who are predisposed to respiratory diseases other than tuberculosis, those who display possible cardiac symptoms, such as doubtful murmurs, mainly functional, those showing mild symptoms of chorea, and selected children showing symptoms of organic cardiac disease. The third group consists of the cardiac patients who require further school segregation and prophylactic care. The fourth group comprises the crippled children. To this group belong the nontuberculous cripples, that is to say, those suffering from poliomyelitis, scoliosis, spastic paralysis, congenital malformation, amputations, progressive muscular dystrophy, etc. It also includes children with cardiac diseases for whom transportation is indicated, as well as cripples suffering from bone tuberculosis of all types.

The open-window classroom requires no structural changes. The ventilation should be direct, fresh air being admitted through open windows equipped with specially constructed window ventilators, to prevent drafts. Under present methods, the open windows are not equipped with window ventilators, and the children are exposed to drafts. The temperature in the rooms should be maintained at a point between 50 and 60 F., by the use of artificial heat. The classrooms for crippled children and for those having marked chronic organic diseases should be located not higher than one flight up. The restriction need not apply to the location of open-window classes for normal and subnormal children designated in the accompanying table, in Groups 1 and 2 under the third section. There is also no need of special furnishings for these two groups. The crippled children and the cardiac patients needing special segregation, however, require adjustable school furniture carefully adapted to their physical disabilities.

It is the opinion of cardiac specialists that certain cardiac patients require rest in school, prone. Therefore, a chair of the type recommended for use in fresh-air classes, adaptable for both school work and sleeping purposes, should be used, rendering but one classroom equipment necessary.

Crippled children require a still more specialized type of adjustable furniture, because of the various kinds of mechanical appliances used in the treatment of their orthopedic defects. It is evident that the long iron leg brace, plaster hip spica and plaster jacket present definite problems of seating, which must be solved by the structural adjustment of the furniture. The furniture now in use for classes of crippled children in the New York City public schools solves these problems. Both desk and seat have a central floor support, instead of the side supports of regular furniture, and are fastened to the floor. This provision leaves ample floor space, both for the locomotion of crutch patients, and for full extension of rigid limbs of brace patients, when the latter are seated. Aisle spaces should not be less than twenty-four inches wide.

The desk top is so constructed that a variable plus or minus distance of great range may be instantly obtained to meet the special seating needs arising from the mechanical appliances worn by the crippled child.

The vertical adjustment is readily made by means of a hand screw on the central supports.

The seat is provided with an adjustable back, similar to that of a Morris chair, with a cane center to prevent undue pressure. This cane back is removable, so that all pressure on sensitive spines may be prevented. The front half of the chair seat is divided anteroposteriorly into adjustable sections, which may be lowered to various angles to meet the requirements of the various types of leg braces. The seat is pivoted, revolving on ball bearings in an arc of 180 degrees, to provide greater mobility and facility for the crippled child in sitting and standing. Additional accessories in seating for the comfort of the child include foot rests, foot braces and air cushions.

Each classroom for nontuberculous cripples is provided with a cot, a sleeping chair and a blanket for emergency use. Each classroom for children with bone tuberculosis is equipped with a cot or a sleeping chair and a blanket for each child to meet the orthopedists' recommendations of a sleeping period in school for this group.

Crippled children are provided with transportation by stage to school and to their homes.

When greater warmth is necessary, children in all open-window classes should be provided with sweaters, coats, leggings, mittens, caps and bloomers for the girls, in addition to their skirts. As these are articles of clothing in common use, no additional expense for personal equipment is needed. The personal equipment of the teacher should be similar in character to that worn by the children in the special class to which she has been assigned.

SUMMARY

1. The type of physical defect should be the basis for the segregation of groups of physically handicapped children in special types of classrooms, that is to say, outdoor, fresh-air and open-window classrooms.

2. The range of temperature is governed by the type of physical defect in each special group.

3. Glass wind and storm shields are recommended to admit light and regulate heat, replacing the canvas or wood protectors now in use. Specially constructed window ventilators should be installed in all open-window classes, to prevent drafts and to protect children seated near the open windows.

4. No classroom for physically handicapped children, with the exception of the kind mentioned in Groups 1 and 2, of the third section in the accompanying table, should be located higher than the second floor unless an elevator is available.

5. In outdoor and fresh-air classes, movable, adjustable chairs are recommended instead of fixed desks and seats. This equipment could then be used for sleeping, rendering but one set of classroom furnishings necessary. A movable equipment in outdoor and fresh-air classrooms has the following additional advantages: (*a*) Direct drafts on children are easily avoided. (*b*) Greater space for classroom activities and physical training is provided. (*c*) The children are permitted greater freedom. In classes for cripples, additional mobility is made possible through specially constructed desks and pivotal chairs.

6. The type of personal equipment should allow the greatest possible freedom for schoolroom activities and physical exercises, and should eliminate the danger arising from fire drills and other emergencies. It should also be sanitary, so as to be easily cleaned. The type of equipment commonly in use fulfils none of these requirements. Before a child is placed in a special classroom with lowered temperature, he should be provided with sufficient underwear and appropriate outer clothing, as well as storm equipment, so that he may not feel the effects of exposure when he leaves the classroom at the end of a school session.

THE MORTALITY FROM PELLAGRA IN THE UNITED STATES

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By force of circumstances, greater attention is at present being directed toward dietary problems than ever before. The growing disproportion between a practically stationary income and an increasing cost of foodstuffs has resulted in considerable hardship during the past few years, and has brought with it an accentuation of diseases commonly associated with deficiencies in diet, such as pellagra and scurvy. Profound alterations in the labor market have led, furthermore, to a far-reaching migration from southern agricultural to the northern industrial centers. Under such circumstances it is appropriate at this time to discuss briefly the recent pellagra statistics, and to call attention to the widespread distribution of the disease in the United States.

That the diet is of basic import, either as a contributing factor or as the etiologic agent in producing pellagra, has been generally accepted by observers, although it must be admitted that no one interpretation

TABLE 1.—PELLAGRA MORTALITY IN THE NORTH ATLANTIC STATES *

	Deaths	
	1915	1916
Maine	10	15
New Hampshire	5	10
Vermont	3	3
Massachusetts	26	37
Connecticut	1	1
Rhode Island	8	7
New York	12	27
Pennsylvania†	?	?
New Jersey	5	4

* Population, 29,246,000; deaths, 1915, 70; 1916, 104; mortality per hundred thousand population (excluding Pennsylvania), 1915, 0.33; 1916, 0.5.
† No statistics available.

TABLE 2.—DEATHS FROM PELLAGRA IN THE SOUTH ATLANTIC STATES *

	Deaths		Rate per 100,000 Pop.	
	1915	1916	1915	1916
Delaware	0	0	0	0
Maryland	15	3	1.1	0.2
District of Columbia	16	9	4.4	2.5
West Virginia†	?	?	?	?
Virginia	332	249	15.1	11.2
North Carolina	831	476	35.0	19 8
South Carolina	1,468	672	92.0	39.0
Georgia‡	2,012	958	70.0	32.8
Florida§	375	202	41.1	22.5

* Population, 13,343,000; deaths, 1915, 5,049; 1916, 2,524; mortality per hundred thousand population (excluding West Virginia), 1915, 42; 1916, 21.
† Deaths reported, but the total number not available to the state health office.
‡ No statistics collected in Georgia; the mortality given is estimated.
§ Statistics incomplete.

of this relation to the disease has been definitely accepted. The corn ration more or less prevalent in the pellagrous districts is not in itself responsible, although it may be one of a number of factors that tend to bring about a state of nutritive deficiency, since zein, the chief protein constituent of the corn, is the

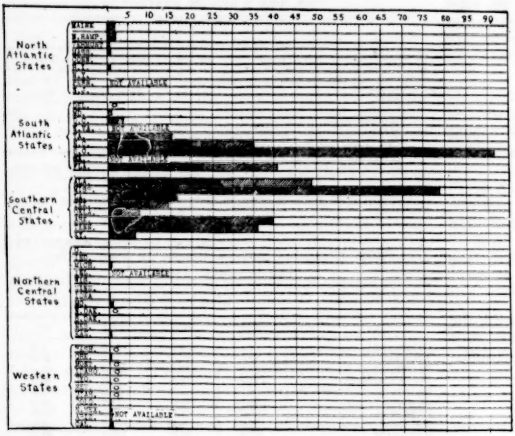
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
North Atlantic States
South Atlantic States
Southern Central States
Northern Central States
Western States
NOT AVAILABLE

Fig. 1.—Graphic representation of pellagra mortality per hundred thousand population during 1915 and 1916. Shaded columns indicate mortality in 1915; black columns indicate mortality in 1916.

only one of the commonly used proteins that is definitely lacking in certain of the amino-acids. The more recent work of Goldberger and his associates has done much to confirm Funk's contention that the disease is due to a vitamin deficiency.

The possibility is not excluded that, instead of dealing with a deficiency, we have to do either with an intoxication from the absorption of toxic products originating in the intestinal tract and related to an altered flora (that such bacterial changes occur has been repeatedly demonstrated), or that a specific organism, as yet not isolated, causes the disease. The epidemiologic data collected by the Thompson-McFadden Commission and by Jobling in Nashville can be interpreted as lending support to the latter hypothesis.

The attention of the profession was directed to pellagra at a time when a rapid increase in the number of cases followed a period of financial stringency (1907-1908). This early period was probably followed by one in which the actual number of cases decreased, although the statistical evidence of this decrease was apparently negated by the increase in the number of cases that were correctly diagnosed. This period was followed by one of very definite and continuous increase in the mortality rate, until a maximum was reached in 1915, the number of recorded deaths for that year being well over 10,000.

In Tables 1-5 the states have been grouped and the pellagra mortality, as reported to the state health officers, has been collected; the graphic representation of the statistics is shown in Figure 1.

THE REDUCTION IN THE MORTALITY RATE

It is at once apparent from Tables 1-5 that a striking reduction in mortality took place during the year 1916, the total number of deaths recorded for 1915 being 10,663, while during 1916 only 6,289 were recorded in the state health offices. This reduction was of greatest extent in the South Atlantic group of states, where the mortality declined from 42 to 21 per hundred thousand population.

When the figures are examined on the basis of race (Table 6) it will be observed that a greater reduction occurred in the colored than in the white race.

INCREASE IN MORTALITY IN THE NORTH ATLANTIC STATES

While a decrease occurred in the chief pellagrous districts, it is rather interesting to observe that in the New England states the mortality, although still low, practically doubled during the year 1916, so that the death rate for Maine and Vermont, for instance, is almost as great as in some of the states directly bordering the pellagrous area.

THE STATISTICAL AND THE ACTUAL MORTALITY RATE

There is very little doubt that the diagnosis of pellagra submitted on the death certificates to the various state health offices is almost invariably correct. The statistics err only in the omission of a vast number of deaths actually due to pellagra but improperly entered on the records as deaths due to other causes. It is very probable that the actual mortality from the disease is from 50 to 75 per cent. greater than is indicated in the statistics presented. This condition is brought about

Fig. 2.—Pellagra mortality of the white race in the United States.

by the following causes: Pellagra, contrary to the usual opinion, is a relatively chronic disease in the white race, and the death, when it does take place, is almost invariably attributed to the diarrhea or its resulting inanition. Symptomatic diagnoses, such as

dysentery, tuberculosis of the intestine, and chronic gastro-enteritis, are found commonly recorded for deaths due to pellagra, as well as symptomatic diagnoses referable to the changes resulting in the central nervous system. We have also to consider that a certain number of deaths recognized by the physician as due to pellagra are not entered by that name on the death certificate because of the prejudice on the part of the laity to a diagnosis involving to a certain extent the social status of the family.

THE MORBIDITY FROM PELLAGRA

Health authorities in the Southern States estimate that approximately 0.5 per cent. of the population is frankly pellagrous. With a population of about 32,500,000 in the pellagrous area, this would mean that there are some 165,000 pellagrins.

It has been estimated by others that for each death from pellagra there are at least fifteen living patients. This ratio applied to the mortality figures for 1915 would result in an estimated total of 157,000. Both of these estimates are undoubtedly greatly below the actual morbidity.

SUMMARY

While the accompanying map (Fig. 2), showing the distribution of the pellagra mortality for the white race during 1916, illustrates that pellagra is still predominantly a disease of the Southern States, nevertheless, deaths occur with considerable uniformity in all states with the exception of those in the northwest part of the country. In Canada, deaths from pellagra have been recorded[1] only in the Province of Ontario, although undoubtedly isolated cases occur in other parts of the Dominion.

The maximum mortality was evidently reached during 1915; since then the number of deaths has diminished. In the colored race the decrease in the mortality has been proportionately greater than in the white race. With the migration to the Northern States of large numbers of colored people, it is very probable that a considerable number of pellagrous individuals will have been included.

104 South Michigan Avenue.

TABLE 3.—NUMBER OF DEATHS FROM PELLAGRA IN THE SOUTH CENTRAL STATES *

	Deaths		Rate per 100,000 Pop.	
	1915	1916	1915	1916
Alabama	1,109	677	48.4	26.6
Mississippi	1,525	840	75.0	43.0
Louisiana	301	295	16.6	16.4
Texas	661	452	14.5	10.0
Oklahoma	152	71	7.2	3.2
Arkansas†	680	500	40.0	28.0
Tennessee	830	607	38.0	26.0
Kentucky	150	120	6.5	5.0

* Population, 19,270,000; deaths, 1915, 5,418; 1916, 3,562; mortality per hundred thousand population, 1915, 28; 1916, 19.

† The mortality for Arkansas is estimated. In 1915, when about 70 per cent. of the deaths were recorded, 477 deaths were reported due to pellagra. The 1916 statistics are not as yet available, and have been estimated as having decreased in the same ratio as those of Tennessee.

TABLE 4.—SUMMARY OF PELLAGRA MORTALITY IN THE NORTH CENTRAL STATES *

	Deaths	
	1915	1916
Ohio	5	6
Indiana	7	4
Michigan	12	4
Illinois†	?	?
Wisconsin	1	0
Minnesota	0	1
Iowa	5	4
Missouri	42	39
North Dakota	0	0
South Dakota	1	0
Nebraska†	?	?
Kansas	21	10

* Population, 32,315,000; deaths, 1915, 94; 1916, 68; mortality per hundred thousand population (excluding Illinois and Nebraska), 1915, 0.37; 1916, 0.27.

† Statistics from Illinois and Nebraska not available.

TABLE 5.—STATISTICS COVERING DEATHS DUE TO PELLAGRA IN THE WESTERN STATES *

	Deaths	
	1915	1916
Oregon	4	3
California	28	25
Colorado	0	3
Washington, Idaho, Utah, Wyoming, Nevada, Montana	0	0
New Mexico, Arizona†	?	?

* Population, 8,694,000; deaths, 1915, 32; 1916, 31; mortality per hundred thousand population (excluding New Mexico and Arizona), 1915, 0.4; 1916, 0.4.

† Deaths from pellagra occur in these states, but statistics are not available.

TABLE 6.—STATISTICAL COMPARISON OF THE MORTALITY FROM PELLAGRA DURING 1915-1916 IN THE WHITE AND COLORED RACES *

	White		Colored	
	1915	1916	1915	1916
Oklahoma	6.1	2.6	14.9	6.6
Tennessee	26.0	20.0	75.0	49.0
Florida	19.0	13.2	77.0	38.0
North Carolina	24.0	14.6	58.0	30.0
District of Columbia	1.9	3.0	11.0	1.0
Alabama	28.0	19.0	74.0	44.0
Louisiana	5.0	7.0	32.0	28.0
Maryland	0.8	0.17	2.6	0.4
Mississippi	32.0	19.0	116.0	61.0
Kentucky	6.3	5.3	5.7	2.6
Average	14.9	10.3	46.6	26.0

* Statistics based on the mortality per hundred thousand population.

Regulations Governing the Dispensary Treatment of Tuberculosis.—The department of health of New York City has recently amended the sanitary code to provide that "no public dispensary where communicable diseases are treated or diagnosed shall be conducted or maintained otherwise than in accordance with the regulations of the Board of Health." This amendment includes ten regulations requiring that the examination and treatment of persons affected with pulmonary tuberculosis be conducted in a special dispensary or department of a dispensary; that proper microscopic examinations of sputum shall be made; that the maximum number of patients examined shall not exceed five an hour; that the necessary medical and nursing staff shall be on duty on all days set apart for the reception of patients; that a proper follow-up system be maintained, that circulars of instruction and advice shall be furnished, and that all applicants be examined at the time of their first visit, irrespective of their place of residence; that an adequate supply of approved sputum receptacles be provided and the use of cuspidors be prohibited; that complete and adequate records be kept of every case of pulmonary tuberculosis examined, such records not to be open to inspection by the public other than the representatives of the Department of Health of the City of New York and such persons as may be authorized by the law to inspect such records; and that every department of a dispensary wherein persons are treated for pulmonary tuberculosis shall employ proper facilities for the examination and treatment of the nose and throat lesions.

1. Pinault, L. G.: Jour. Can. Med. Assn., 1916, **6**, 228. Rolph, F. W.: Ibid., p. 323.

ETIOLOGIC FACTORS IN GROSS LESIONS OF THE LARGE JOINTS

OBSERVATIONS FROM ONE THOUSAND ONE HUNDRED CONSECUTIVE NECROPSIES *

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The routine performance of a necropsy, generally speaking, does not include a section and an examination of the joints unless the clinical history or the external appearance of the joint happens to indicate the presence of arthritis. There was no departure from this rule at Ancon until Dr. L. B. Bates began the application of the Wassermann test. He soon noticed that a number of the laborers who responded in a positive manner to the test had associated with their clinical history an ill defined type of arthritic symptoms. This feature became so significant among the negro laborers that Dr. Walter Baetz,[1] then in charge of the negro medical service, made a clinical study of the acute arthritic conditions occurring in his service. In his report, in 1913, of 100 cases of acute arthritis among negro laborers in the Panama Canal Zone, he thus named the types according to the frequency of their etiologic factor; syphilitic arthritis, 63; gonorrheal arthritis, 28; undetermined arthritis, 6; dysenteric arthritis, 2, and tuberculous arthritis, 1.

The important position given to syphilis in this report was so surprising that it stimulated some interest in what might be found at necropsy. Since the report of Baetz, others have occasionally appeared which also indicate the importance of syphilis in this respect. A study of the joints in 200 necropsies in Berlin showed that after exclusion of the typical types of joint disease there still remained in this series 178 bodies without a typical type of arthritis which revealed macroscopically visible changes in the joints in at least 143 individuals.[2]

Various textbooks on clinical medicine and on pathology grant but small space to a discussion of syphilis and age respecting lesions in the joints. In the fullest account to which I have ready access[3] is the statement:

> Syphilitic affections of the joints make their appearance either at the time of the secondary eruptive stage or in the tertiary stage of the disease. In the secondary stage the affection takes the form of a serous synovitis, resembling that associated with acute articular rheumatism. In rare cases a like effusion takes place even in the later stages; but as a rule the tertiary syphilitic arthropathies are of a chronic kind, and are characterized by the formation of gummatous nodes and thickenings in the capsule, proliferation of the synovial membrane, and fibrillation and erosion of the cartilage. Syphilitic arthritis may occur as a primary affection of the joint, or may be due to the extension into it of specific inflammation from the periosteum or bone marrow.

Since so little could be found regarding the incidence of gross pathology in the joints, and especially regarding the possible relation of syphilis to joint lesions, it seemed desirable to follow the local clinical observations with some anatomic observations. It was arranged to do a Wassermann test in all cases with a grave prognosis, and in the event of no antemortem test, to apply it to the postmortem serum whenever it was in a satisfactory state for analysis. To the routine necropsy examination was added a section of the large joints: the shoulders, hips and knees. Other joints were opened only when there was a clinical history or gross external evidence of disease in them or when extensive change was noted in the large joints mentioned.

It is common knowledge that a necropsy often reveals a lesion in the middle ears, accessory sinuses, tonsils, gallbladder, duodenum, appendix and the genito-urinary system that had not declared its presence, or had had its clinical picture obscured by the more important disease present at the time of death. With this fact in mind, it is to be expected that a joint might be the seat of a lesion which represents a remote sequel to a disease that may be little related to the disease causing death.

It is not the intention to include in this series of cases all those showing very small areas of degenerative change in the cartilages, such as flattening and change of color at the points of pressure, or effusions such as commonly occur in the joint cavities just as in other serous cavities in some chronic diseases. Only those joint changes are to be discussed which have offered a *well defined gross lesion* of the cartilages, bone or joint content. Since the inauguration of this method of examination, 1,100 necropsies have been performed. Less than 1 per cent. of these individuals were considered "arthritic suspects," yet 172 cases offered some significant type of a well defined gross lesion. It is quite impossible thoroughly to dissociate the various etiologic factors known to produce arthritis in the discussion of this series, since many of the individuals had a remote history or the present evidence of more than one possible etiology. As in many such studies, the matter resolves itself into the expression of a personal opinion; and after weighing the general findings, both clinical and pathologic, surrounding these cases, I am led to arrange them in the order given in Table 1.

TABLE 1.—ETIOLOGIC FACTORS IN ONE HUNDRED AND SEVENTY-TWO CASES OF ARTHRITIS

	Number of Cases
Syphilis	96
Arteriosclerosis	33
Gonococcus	10
Undetermined	10
Streptococcus	6
Staphylococcus	5
Tuberculosis	4
Pneumococcus	2
Meningococcus	2
Trauma	2
Pellagra (?)	1
Scurvy	1

A classification for the sake of convenience in further analysis is necessitated, and therefore the 172 cases have been arranged in three groups (Table 2). Group 1 includes all cases showing a degenerative type of lesion associated with a positive Wassermann test, or with supportive lesions of syphilis found at necropsy, or with the history of having been treated for syphilis. Group 2 includes only those showing a degenerative lesion associated with arteriosclerosis and not showing the presence of any other factor acute or chronic in type. Group 3 includes all well recognized types of arthritis and the undetermined acute types.

* From the board of health laboratory.

1. Baetz, Walter: One Hundred Cases of Acute Arthritis Among Negro Laborers on the Panama Canal Zone, THE JOURNAL A. M. A., April 5, 1913, p. 1065.
2. Beitzke, H.: Ueber die sog. Arthritis deformans atrophica, Ztschr. f. klin. Med., 1913, **74**, 215, cited in Current Comment, THE JOURNAL A. M. A., Sept. 6, 1913, p. 779.
3. Ziegler, Ernst: A Text-Book of Special Pathological Anatomy, pp. 285, 286.

Practically all the bodies were of negroes or of negro mixtures. Nearly all were of persons who had been hard laborers, tradesmen on their feet all day, or domestic servants and laundresses. Of the cases listed under syphilis and arteriosclerosis (Groups 1 and 2), about 80 per cent. of the deaths had occurred as a result of chronic cardiovascular disease, renal disease or chronic disease of the central nervous system (many of the persons had been insane).

The Wassermann test on the blood was positive in sixty-six of the ninety-six cases in Group 1; in two additional cases there was a positive spinal fluid test, eight could not be tested, and in nineteen there was a negative response but a history of syphilis, and supportive lesions of the disease at necropsy. The various special tests for the spinal fluid were not applied to the cases in this series.

TABLE 2.—DISTRIBUTION OF ARTHRITIS CASES

Age, Years	Number of Necropsies Performed	Syphilis Associated: Group 1	Arterio-sclerosis: Group 2	All Other Types: Group 3
Less than 2	207	0	0	1
From 2 to 9	40	0	0	1
From 10 to 19	39	0	0	0
From 20 to 29	312	15	1	14
From 30 to 39	251	23	0	12
From 40 to 49	132	30	9	6
From 50 to 59	74	21	9	3
From 60 to 69	35	6	10	5
From 70 to 79	8	1	2	1
80 and over	2	0	2	0
Totals	1,100	96	33	43
Sex				
Males	792	77	23	27
Females	308	19	10	16
Totals	1,100	96	33	43

Table 3 gives a list of some of the lesions found associated with the cases under Group 1 and believed to be "supportive lesions" of syphilis.

It is not considered important to discuss the cases in Group 3, since they were all well defined acute types that have already been indicated. Several of these cases, however, represent a secondary invasion by an acute factor of a joint already the seat of the chronic degenerative type of arthritis about to be described, and it is to be expected that such a joint, with its plates eroded and its nutrition below normal, would frequently favor the localization of an acute process.

The lesion found in the cases under Groups 1 and 2 were identical in character, and therefore the description of the lesion found in Group 1 will suffice.

LESION IN THE UNCOMPLICATED CHRONIC DEGENERATIVE TYPE OF ARTHRITIS

The knee, being the most common location of the process, is best suited to illustrate the lesion. The external examination of the joint seldom offered any sign of the change to be exposed by the disarticulation of the joint. The cavity was usually almost dry or partially filled with a straw colored, transparent, gelatinous material. The synovial membrane many times presented no visible change, but infrequently it was found thickened, red and granular, and more infrequently containing a polypoid growth with a little flaky material or perhaps some free pieces of cartilage floating in the scanty joint fluid. Adhesions spanning the joint cavity between the bone surfaces were almost never found. The most common and significant change to be found was located in the cartilages at the points of the greatest "occupational pressure." The cartilage of the patella, and the condyles of the femur and of the head of the tibia were in many instances almost destroyed; but the majority of the cases revealed a loss of substance in the cartilages only in those regions subjected to the greatest and longest continued pressure strain in the daily use of the joint. The buffer influence of the semilunar cartilages in most instances saved the tibia from extensive involvement; but the center of each condyle, the groove between the condyles at a little higher level, and the surface of the patella suffered such extensive losses of cartilage that comparatively large areas of bone were exposed. Many times this bony bed would be rough, red and cancellous in character, while at other times it was a polished, red surface. No pus or fibrin filled these exposed places, and granulations were seldom present. The patella appears to be the first to suffer, as a general rule; since, in what is considered to be the earliest stage of the process, the cartilage of this bone shows the most extensive softening, fibrillation and lemon color, and this condition is often present when the other bones show but scant involvement. The final stage of the lesion appears to be represented by those cases revealing complete absorption of the cartilages and exposure of large areas of bone at points corresponding to the pressure areas.

COMMENT

The character, position and size of the joint lesion strongly suggest a degenerative result and absorption rather than the local action of micro-organisms, although such a joint could well be expected to favor a secondary invasion by some pyogenic factor, since its devitalized condition and constant use would facilitate the localization.

It is believed that chronic vascular disease, such as syphilitic arteritis and arteriosclerosis, reduces nutrition to the joint plates, and that at the "pressure areas" nutrition is further reduced by the hard daily use of the joint, so that degeneration and absorption of the cartilages take place, finally resulting in the exposure of the bone, and being usually limited to the areas of greatest pressure. Many of the persons in this series from early life had been in the habit of carrying burdens on their heads. Frequently this load would be greater than the same person could have carried by hand. This no doubt materially increased the strain on the hips and knees, and may account for the great incidence of the knee lesions; although this joint, being a large one situated between two important epiphyses and subjected to the strain of long, large bone levers supplied by many groups of powerful muscles, is to be expected to reveal this type of lesion more than any other joint.

TABLE 3.—SUPPORTIVE LESIONS IN GROUP 1

	Number
Aortitis	63
Chronic aortic endocarditis	21
Genital scars	17
Chronic osteitis	14
Scars in liver, spleen and kidneys	14
Aneurysm	13
Cerebral hemorrhage and softening in young adults	28
Chronic types of meningitis and focal areas of brain sclerosis	10
Gummas	5
Chronic orchitis	5
Arteritis obliterans	4
Chronic leg ulcer	3
Iritis	2
Rectal ulcer (stricture)	1

It appears reasonable to suppose that syphilis may be frequently an important preliminary factor in producing this type of joint lesion. The results in the vascular system of an untreated course of syphilis are today well known, and a glance at the ages of the persons comprising Group 1 of this series will reveal a large number of adults in the early decades of life, periods earlier than senile changes are to be expected, although the lesion present resembles such a change. The summary[4] of the year's work in this laboratory for the year 1916 showed that 3,947 negroes and mulattoes were examined by a Wassermann test and

TABLE 4.—DISTRIBUTION OF JOINT LESIONS

Location	Syphilis Associated: Group 1	Arterio-sclerosis: Group 2	All Other Forms: Group 3
Right knee	90	33	28
Left knee	92	32	28
Right hip	17	7	6
Left hip	9	6	4
Right shoulder	17	10	4
Left shoulder	8	9	5
Right elbow	2	0	3
Left elbow	2	0	2
Right ankle	2	0	4
Left ankle	3	0	1
Right wrist	1	0	0
Left wrist	0	0	0
Spine	1	0	2
Digits	0	0	1

that 30 per cent. were positive. When it is recalled that the 1,100 cadavers in this series of necropsies were of unselected persons with regard to the test, and that ninety-six out of 172 joint cases could be placed in Group 1, the relation of syphilis to these degenerative lesions seems to be more than mere coincidence. Syphilis and arteriosclerosis are indicated as important preliminary factors in preparing the joint plates for the development of degenerative arthritis.

These degenerative changes in the joints may represent the remote results of what Baetz has named, in the secondary period of the disease, "syphilitic arthritis."

Certainly the gross pathologist, in the absence of arteriosclerosis, should look on this condition when present in the body of a young adult as suggestive of syphilis, and apply the laboratory tests for the disease.

SUMMARY

1. Gross lesions of arthritis were found in 15.6 per cent. of 1,100 consecutive necropsies, and less than 1 per cent. of those showing the lesions were considered "arthritic suspects."

2. All but two of the persons showing arthritis were hard working adults belonging chiefly to the negro race.

3. A chronic degenerative type of arthritis included 129 of the cases, while forty-three cases were well known acute types of arthritis or some ill defined acute and chronic types combined.

4. Chronic vascular disease (syphilis and arteriosclerosis) and employment at hard labor are considered important etiologic factors in the production of chronic degenerative arthritis.

5. The focal degenerative arthritis found at necropsy in young adults offers the gross pathologist, in my opinion, some additional presumptive evidence of syphilis, and the application of the laboratory tests for the disease is indicated.

4. Russell, F. F.: Summary and Discussion of the Work Performed in the Board of Health Laboratory During the Year 1916, Proc. Med. Assn. Isth. Canal Zone, **10**, Part 1.

MYOSITIS PURULENTA ACUTA CAUSED BY BACILLUS TYPHOSUS

REPORT OF A CASE *

MASANAKA TERADA, M.D.
TOKYO, JAPAN

The pyogenic property of the typhoid bacillus was long a topic of discussion by medical writers. At present, as the result of satisfactory evidence, many authors agree that the typhoid bacillus can cause the formation of pus in various organs, although cases of typhoid followed by myositis purulenta acuta caused by the typhoid bacillus are very rare. Lately I have observed a case of myositis purulenta acuta of the upper arm caused by the typhoid bacillus during the course of typhoid fever.

REPORT OF CASE

History.—A man, aged 34, who had enjoyed good health, was suddenly taken ill with chills and fever, the temperature reaching 40.2 C. (104.3 F.) at onset. The lips were dry and the tongue was coated with a thick white fur; the appetite was poor; there was retraction of the abdominal wall, but no tenderness. At first there was slight diarrhea, but later, constipation. The spleen became enlarged, and its edge was distinctly felt below the costal margin. In the liver and the kidney no changes were clinically noted. The pulse was strong and regular, ranging 100 or more, and the heart sounds were normal. There were no changes of the respiratory organs throughout the entire course save for the occurrence of epistaxis two or three times. There were no serious nervous manifestations at the beginning, but only persisting headache and slight pain in the lumbar region. Toward the end of the disease the patient was delirious. There were no changes in the kidney. The urine was almost transparent, weakly alkaline, with a specific gravity of 1.010 and no sugar or precipitate, but with a trace of protein. The diazoreaction was positive. Microscopically there were no abnormal constituents except a few leukocytes. There were no changes in the testicle, epididymis or prostatic gland.

A few days after the onset, the characteristic rose-red rashes appeared. Two weeks later the patient began to complain of pain in both the upper arms. This attack of pain was accompanied by chills and high fever, and a reddish swelling appeared on the postero-external side of the right upper arm, extending from the elbow to the lower margin of the deltoid muscle. Petechiae were present, but a thickened periosteum was not palpable. The symptoms of the left upper arm diminished in severity. A deep incision was made in the upper third of the right arm, and a small quantity of seropurulent fluid was evacuated. Later a few blebs formed around the incision.

Bacteriologic Examination.—A few drops of the patient's blood were cultivated in bile broth and ordinary broth; both mediums showed uniform cloudiness. The growth, when cultivated on various mediums, showed the following characteristics:

Agar: After incubation for twenty-four hours at 37 C. (98.6 F.), small, circular, thin, bluish-gray, transparent colonies were seen which remained always thin.

Gelatin: All the colonies presented a characteristic appearance. After incubation at 37 C. for twenty-four hours, small, round colonies, always thin and transparent, appeared. The edge of each colony became indented and sinuous, and at the same time ridges extended from them into the center, which became thicker than the margins. The colonies developing in the depth of the gelatin and sometimes even those on the surface had quite a different appearance. They were round and opaque, and were about the size of a pinhead.

Stab Culture: After incubation for twenty-four hours at 37 C., along the line of the stab, small, round, yellowish-white

* From the microbiologic department of the Tokyo Charity Hospital-Medical College.

and confluent colonies appeared, while on the surface there were thin, transparent and widespread confluent colonies.

Milk: The bacillus grew abundantly without coagulating the milk.

Broth and Peptone Medium: The growth in these mediums showed a slight cloudiness, but gradually became more marked, and later the growth became flocculent and ultimately formed an abundant sediment at the bottom of the tube. There was no indol reaction in these mediums.

Litmus-Whey: The fluid remained transparent and reddish-purple, and the bacillus produced no acid.

Glucose-Agar: There was no production of gas.

Potato: At first sight there appeared to be no growth at all, but examination of the surface revealed a slightly moist and very thin deposit.

Morphologically, the bacillus cultivated on agar was as a rule very motile, easily stained with the basic anilin dyes, gram-negative, and rod shaped.

Immunologic Examination.—The bacillus was agglutinated markedly by typhoid-immune serum. Bacteriologic examination of the feces many times ended in negative results. Negative Widal reactions were obtained nine and fourteen days after the onset of the disease. From the fluid that flowed from the operative wound and from the blebs around the wound, a bacillus was cultivated whose properties were ascertained to be identical with those of the bacillus from the blood of the patient.

Postmortem Examination.—Local Changes: The operative wound of the right upper arm presented the appearance of myositis purulenta acuta, and on pressure a small quantity of grayish fluid flowed out.

Changes in the Intestine: In the lower part of the ileum, corresponding to Peyer's patches, were round or oval ulcers of various sizes. Their borders were as a rule undermined, and sometimes their surfaces appeared dark red. Large ulcers were seen, especially in the lower part of the cecum. The large intestine was filled with an enormous quantity of clotting, and its mucous membrane was a pale brownish gray. The spleen, the liver, the heart, the kidney and other organs also were undergoing acute degenerative changes.

COMMENT

The bacteriologic and pathologic findings justify the conclusion that the case was one of typhoid followed by myositis purulenta acuta. The onset was marked by chills and high fever. The temperature gradually fell, and in a week after the onset became normal. Soon afterward the temperature rose, and was accompanied by myositis purulenta acuta as a partial symptom of the general bacteremia.

Sanatorium Food Monotony.—The importance of nourishing food in sufficient quantities is no greater than the importance of having it pleasing and acceptable to the patient. This is recognized by the relatives, friends and well-wishers of the patient. But unfortunately in many sanatoriums attention is given only to the nutritive aspect of the food and its quantity, while a sad indifference is manifested to its no less important psychological aspects. In the patient's humble home, every effort is made—and properly—to cater to his appetite. The well sacrifice their own comfort in order to further the assimilative forces of the sick by attending to the psychic signaling of the stomach. In the sanatorium it is argued that individual attention in these matters cannot be given. Ergo, a nauseating monotony is introduced in the form of a weekly menu as unalterable as the laws of the Medes and Persians. The guaranteed stability of this dietetic order enables every patient to anticipate with apprehension and loss of appetite the exact arrival of the dish that to him happens to be intolerable. Moreover, the anticipatory distaste irradiates over other food in the same meal which would otherwise be agreeable. Thus the patient is deprived of a most important adjunct to his cure.—Samuel Wolman, M.D., *The Survey.*

Clinical Notes, Suggestions, and New Instruments

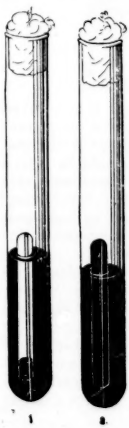
AN IMPROVED MODIFICATION OF THE DURHAM FERMENTATION TUBE

K. D. GRAVES, M.D., RICHMOND, VA.

Owing to the fact that certain germs, notably the *Bacillus coli*, have specific action on lactose, breaking it up with the formation of gas when they come in contact with it in culture mediums, it has been the custom for a number of years to use a culture medium having lactose as one of its constituents as a means of testing germs for their sugar-breaking property. A number of containers for the culture mediums have been used, the first of which Smith[1] described in 1889. This bears his name, and has been the one most generally in use until the last few years.

In 1899, Hill[2] suggested a modification of Smith's tube, which consisted of a tightly fitting ground glass stopper with which to close the long arm.

Both Smith's and Hill's tubes, however, were expensive, bulky and hard to clean; hence, when Durham,[3] in 1900, described his tube, which consisted of an ordinary test tube with a smaller tube inverted inside of it, it was considered a distinct step forward.



Tube **1**, inner test tube in position inverted over a wooden rod; Tube 2, after being heated in the autoclave, the inverted tube becomes filled with the medium.

Durham's tube, which seemed to give satisfaction, has come into general use, and is now considered equally as efficient as the Smith tube. Recently, by a large series of experiments and comparative tests, Lee and Fegely[4] have concluded that "from the standpoint of total efficiency, the Durham tube seems to be the superior of the Smith tube."

In 1914, Hall[5] showed, by a comparative table of results, the value of having a beveled or diagonal edge, instead of a square one, on the inner tube. As Hall pointed out, one objection to the Hall tube is the fact that it is impossible to determine the quality of gas formed in this tube; but this is not really important, since it is simply the presence of gas-forming bacteria that is of interest in the presumptive test for colon bacilli. The chief objection to both the Hall and the Durham tubes is that with them it is difficult to shake up the mediums sufficiently to get the germs into the inner tube in a specimen which is not heavily infected. By running duplicates, inoculated with *B. coli*, I have found that by shaking samples thoroughly several times a day, I would frequently get gas formation in tubes whose unshaken duplicates would not show gas until several hours later; and on comparing the shaken and unshaken tubes, a larger percentage of gas in the shaken tubes was usually obtained than in the unshaken ones.

These results caused me to feel that probably in making presumptive test of water samples for *B. coli*, this organism was present in a number of cases in such small amount that the germs did not multiply in sufficient numbers to inoculate the inner tube during the time allowed for incubation. The causes which could produce a negative report on a sample of water which had gas-forming bacteria present seem to me to be: (1) The germs might be purely aerobic; (2) the sample of water might have a tendency to stratify near the top of the tube, since it is of a lower specific gravity and does not mix

1. Smith, Theobald: Centralbl. f. Bakteriol., 1890, **7**, 502.
2. Hill, H. W.: Jour. Boston Soc. Med. Sc., 1899, **3**, 137.
3. Durham: Jour. Exper. Med., 1900-1901, **5**, 353.
4. Lee, R. E., and Fegely, W. H.: Am. Jour. Pub. Health, 1914, **4**, 999.
5. Hall, I. W.: Am. Jour. Pub. Health, 1914, **4**, 1173.

freely with the bile medium, and (3) the live germs might be held near the surface of the medium by surface tension.

Taking these facts into consideration, I have devised a tube which overcomes the principal objection to the Durham tube. With this tube it is comparatively easy for bacteria to pass into the inner tube; it is scarcely any more difficult to make and to clean than is the Durham tube, and it is no more bulky.

Technic.—Into a test tube, about 20 mm. in diameter and 250 mm. long, is tubed about 20 c.c. of the medium to be used (1 per cent. lactose-peptone bile, or lactose-peptone broth). Into this is dropped a tube, 30 mm. long and about 5 mm. in diameter which is inverted over a wooden rod, 50 mm. long and about 2 mm. in diameter. Wooden swab applicators will answer this purpose (Tube 1). The test tube is then slanted to an angle of about 45 degrees and heated to 15 pounds' pressure in the autoclave for half an hour; the escape valve to the autoclave is left slightly open, so that the air which was in the inverted tube escapes as the medium heats up, and its place is taken by vapor from the medium; and later, after the heat is cut off and the medium cools, the vapor condenses, and the inner tube becomes filled with the medium (Tube 2).

I have used these tubes in the laboratory of the Richmond Health Department for the past six months, running them in duplicate with the regular Durham tubes, and they have proved themselves eminently satisfactory.

ADVANTAGES

The use of this tube offers the following advantages:

1. The mouth of the inverted tube is lifted some distance from the bottom of the test tube, allowing free circulation of the mediums in and out of the inverted tube.

2. Shaking is more thoroughly accomplished, since the impact of the inverted tube with the wooden rod causes a sort of churning movement, which draws in and expels the mediums.

3. Raising the mouth of the inverted tube causes a certain amount of gas which is formed between the mouth of the inverted tube and the bottom of the large tube to be caught.

4. The inside tubes are easier to fill, as they are raised from the bottom of the test tube, and a much better egress is offered for the air which they contain.

A DEVICE TO IMMOBILIZE THE HEAD AND EYELIDS DURING OPERATIONS ON THE EYEBALL

E. R. CROSSLEY, M.D., CHICAGO

Many forms of lid speculum have been devised for controlling the eyelids during operative procedures on the eyeball, most of which depend on the force of a spring of some character to retract the lids. All these devices have their weakness in their frailty and the fact that the patient "can squeeze the eyeball itself" with the lids and actually throw the speculum out of the eye during the operation.

With the ordinary form of speculum, the routine procedure before doing a cataract extraction, after the patient has been placed in position on the table, is to talk to him to get control and his confidence and attempt to exert a hypnotic influence on his mind. If he happens to be a good patient, the surgeon succeeds. If nervous and excitable, as most are, he may roll the head to one side at the critical moment, when the knife is through the anterior chamber, and interfere seriously with the incision or cause the operator to do serious damage to the eye with the knife, if he does not dexterously follow the movement of the head.

The most serious damage may come after the incision is completed and the anterior chamber is open. He may squeeze violently enough to throw out the lens and vitreous through the opening, and lose the eye entirely. Then the patient is told that it was his own fault for he squeezed. This is not a true statement, for the act is largely involuntary on his part, and we as operators, knowing it to be such, are responsible and should take some positive means to control the patient so that such mishaps are impossible.

Undoubtedly, this common accident has occurred to all who are doing an extensive amount of this kind of work.

In the presentation of this appliance for the immobilization of the head and eyelids during operations on the eyeball, I offer a mechanical device that takes complete control of the head and eyelids more effectively and efficiently than a trained assistant can possibly do.

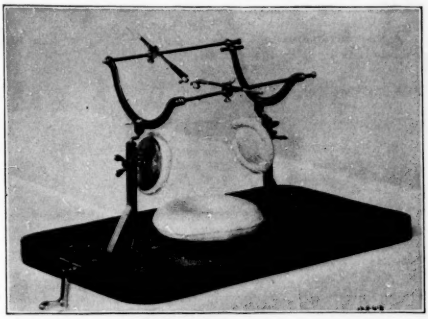


Fig. 1.—Apparatus for immobilization of the head and the eyelids.

With this head clamp and eyelid retractor, the operator can go to his operation with a feeling that no accident is going to occur to detract from his good results, and that he can positively assure his patient that he cannot move and injure himself during the operation.

This reassures his mind and inspires confidence in the operator, obtaining a perfect control of the situation that is impossible to obtain otherwise.

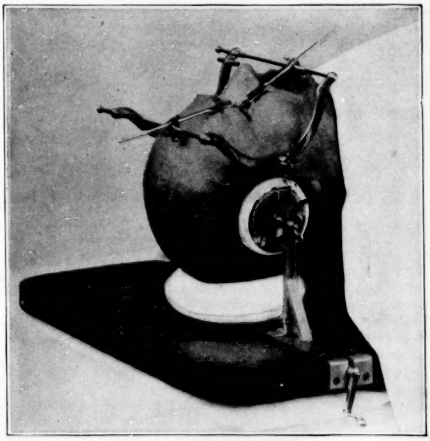


Fig. 2.—Patient with head and eyelids fixed ready for operation.

The apparatus consists of two parts, the base and superstructure or framework carrying the lid hooks.

The base consists of a rectangular wooden block 12 by 22 inches, lengthwise through which is a long screw on which are mounted two strong metal uprights, one of which is stationary, and the other movable. Attached to these are large pads, which grasp the sides of the head as the one approaches the other. The superstructure is a metallic frame which

attaches easily to the uprights. On the crossbars of this structure are mounted two sliding locks, for fixing the lid hooks after the lids have been retracted.

Figure 1 shows the apparatus fully set up. Between the two uprights is placed a circular pad which serves as a comfortable head rest. The length of the base is 22 inches, the average width of surgical tables. By means of clamps, the apparatus is fixed firmly to the table on which the patient lies.

Figure 2 shows the patient on the table with the head and the eyelids fixed ready for operation.

In this illustration it will be noticed that the lids are retracted away from the eyeballs, preventing any possibility of squeezing.

29 East Madison Street.

OPEN SAFETY PIN IN AN INFANT'S STOMACH AND DUODENUM

C. WINFIELD PERKINS, M.D., NEW YORK

A mother, after a temporary absence, entering the room of her child, aged 14 months, noted that the youngster was swallowing with difficulty. These symptoms terminated in a short time. The mother, naturally becoming suspicious,

Position of safety pin two weeks after the accident. Stomach distended. The duodenum is indicated by the white dotted line.

examined the child's clothing, and where there had been two safety pins, only one was in evidence. A physician was then consulted, and a careful watch for symptoms with a daily examination of the stools was made, without any results. The child all the time seemed perfectly well, showing no symptoms of discomfort whatsoever. A week passed, and the little patient was referred by Dr. J. P. Seward for roentgen examination.

Fluoroscopic and roentgenographic examination visualized and open safety pin lodged in the pyloric region. It was decided to wait a while longer with the hope that the pin might pass, as the child continued in good physical condition. The second roentgenogram, a week later, showed the pin located in the same position, associated with a distended stomach and the beginning of some gastric distress, for the child was now continually sleeping on the abdomen. Operation was now decided on, and Dr. W. G. Crump of New York removed the open safety pin, the location and position of which were of exceptional interest, the bar of the safety catch having passed the pylorus into the duodenum, while the sharp end of the pin was embedded in the gastric mucous membrane of the pyloric region, thereby assuming the anatomic angle between the pylorus and the first portion of the duodenum. It can readily be seen that the passage of the pin under such circumstances would be practically impossible.

The child recovered without incident after the operation.

234 Central Park West.

A TUBE FOR BLADDER DRAINAGE IN THE FIRST STAGE OF SUPRAPUBIC PROSTATECTOMY

EDGAR G. BALLENGER, M.D., AND OMAR F. ELDER, M.D., ATLANTA, GA.

As a rule the major portion of the time required for the preliminary bladder drainage in a two-stage prostatectomy is

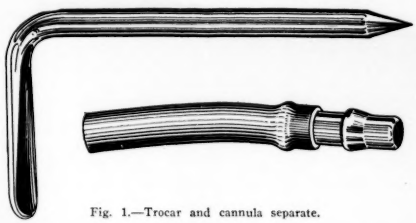


Fig. 1.—Trocar and cannula separate.

taken in securing a snug-fitting purse-string suture around the tube.

To shorten this time and to facilitate the procedure, we have devised a trocar-drainage tube, which is carried through the bladder wall by means of a pointed obturator, which is then taken out, leaving in place the drainage tube, which is connected to a rubber tube, and the urine allowed to flow out.

No suturing of the bladder wall is required, as the tissues composing it are merely pressed apart and it fits snugly around the tube, which cannot slip out of the bladder because of a shoulder on the part of the tube in the bladder. Another shoulder on the outer part of the tube prevents its slipping into the bladder. The obturator is sharpened in a rounded manner and therefore has no cutting edges.

The skin incision, which has been made in the usual manner, is closed with two or three silkworm-gut sutures. The usual care, of course, should be taken to have the bladder distended and the peritoneum pushed well up out of the way. The operation can always be done under gas-oxygen anesthesia or novocain, as it is not necessary to have the muscular relaxation that is required for a purse-string suture.

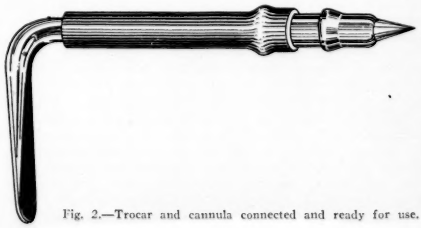


Fig. 2.—Trocar and cannula connected and ready for use.

The advantages, therefore, of such a tube are a shorter time for the operation, a milder anesthesia, and an opening in the bladder which fits the tube so closely that no leakage of urine occurs.

As can be seen from the illustrations, a rubber tube is firmly connected to the outer end of the metal tube. This permits an easy connection to the tube leading to the bottle into which the urine drains. The caliber of the tubes we have employed is one-half inch.

A CARDIOSPASM DILATOR

J. W. LARIMORE, M.D., ST. LOUIS

The cardiospasm dilator described here was developed to meet certain exigencies in the treatment of cardiospasm cases. It was made by using an ordinary stomach tube of small diameter and attaching to its end the tapering tip of a small bougie. A rubber balloon was then fastened about the tube and bougie end, as shown. About this was placed a bag made of very light weight silk, and so cut that when the first or inner balloon was inflated, there would appear a constriction about the middle. A second balloon was fastened over this. Air-tight fastening of the ends of the balloons was made with rubber cement and winding with small silk thread. This constitutes the dilator proper. Another small balloon may be added inside the first large balloon at its proximal end (Figs. 1 and 2*B*). This balloon is also covered by a silk bag which limits its degree of inflation. Its tube for inflation may extend, as is shown, through the lumen of the stomach tube. By a three-way stopcock on the proximal end of the apparatus, either the small balloon or the large outer balloons may be inflated. The small balloon is used by inflating it primarily for locating the instrument definitely within the constriction. It may or may not be used, as circumstances demand.

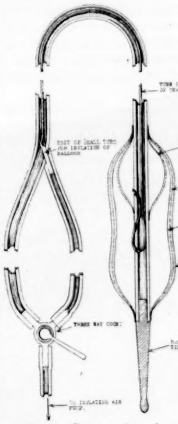


Fig. 1.—Construction of cardiospasm dilator.

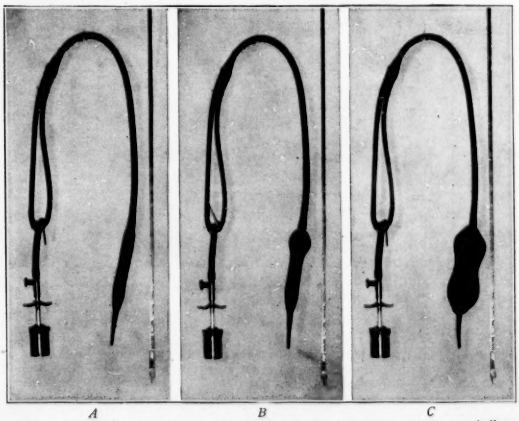


Fig. 2.—Cardiospasm dilator: *A*, uninflated; *B*, with the small inner balloon inflated; when this is introduced to the constriction, the large balloon is properly placed within the spasm; *C*, with the three walled dilating balloon fully inflated.

Air inflation has been found most satisfactory, and is accomplished by the pump from a blood-pressure apparatus. The instrument is shown in the illustrations, and its dimensions may be determined from the accompanying measure.

It has been found that a manometer need not be used, and that the expression of pain by the patient is an adequate and sure guide. The number of strokes of the pump necessary to secure inflation to a moderate or high pressure may be previously determined, and with this knowledge the extent of dilatation during treatment may be readily estimated by counting the strokes which are sufficient to produce pain reaction.

A mandarin is unnecessary for the introduction of the instrument. The tapered bougie tip makes unnecessary preliminary dilatation with bougies. The construction of the inflation balloons allows the instrument to establish itself at the constriction level without slipping above into the sac or below into the stomach.

PELLAGRA IN CHILE

HOWARD K. TUTTLE, M.D., COQUIMBO, CHILE, SOUTH AMERICA

I believe that this case of pellagra is the first to appear in Chile.

History.—A white girl, aged 11 years, was brought to our company dispensary for treatment. The other members of the family, including three sisters and two brothers, were in good health. The patient first noticed that the skin on the backs of the hands was becoming red, and that the redness was gradually extending up the forearm, being accompanied by considerable burning and itching. Later the disease appeared on the face, forehead and sides of the neck; the tongue was swollen and sore, and the mouth hot and dry. There were pain in the epigastrium, intense thirst and severe attacks of vomiting. Diarrhea accompanied by cramplike pains in the lower abdomen had been present for some time. Nervous symptoms, such as headache, dizziness, choking sensations, tenderness over the spine, or mild convulsions, also disturbed the patient.

Physical Examination.—The skin over the backs of the hands, forearms, face, forehead and sides of the neck was covered with a reddish-brown, scaling, thickened epithelium. On the hands and arms the scaling was very marked, and extended from the base of the nails to within about 3 inches of the elbow, ending in a distinct outline at the dress sleeve. The mucous membrane of the tongue was swollen, reddened and thickened, but smooth, except for a few deep fissures. The patient had a sad, forlorn facial expression. There was some tremor, and a slow, unsteady gait, showing marked weakness. Palpation revealed severe pain over the epigastrium and dorsal spine.

Treatment and Course.—All corn, cornmeal, rice and dried vegetables were prohibited, and meats, fish, eggs, fruits and milk substituted. Arsenic and dilute hydrochloric acid in proper doses were given internally, and an ointment composed of oil of cade, zinc oxid and petrolatum was applied. Under this treatment the dermatitis showed considerable improvement, especially on the face. This treatment had been instituted during the winter months, but when spring returned, the child was again living in the careless condition of poverty and indifference. The disease began to make rapid progress, resulting in extreme emaciation, anemia, mild dementia and death.

COMMENT

This case presented symptoms so distinct that they could hardly have been mistaken. It is of particular interest, since it serves to illustrate the wide distribution of pellagra, and it is probably the first case reported from Chile.

Disease Defined.—Disease is that condition of an individual in which there is, apart from the normal changes due to age, an alteration of the structures or functions or sensations usually found in the average man of any particular race.—Prof. Ernest S. Reynolds, Bradshaw Lecture.

SYMMETRICAL OSTEOMYELITIS FOLLOWED BY COMPLETE REGENERATION

GEORGE BLACKBURNE, M.D., NEWARK, N. J.
Assistant Attending Surgeon, St. Michael's Hospital; Assistant Attending Gynecologist, Newark City Hospital

M. R., white girl, aged 12 years, was referred to me in December, 1914, with the following history: Five months

Fig. 1.—Condition of thumbs, Dec. 28, 1914.

before, the ends of both thumbs had become swollen and painful. A pustule appeared on the ball of each thumb. These pustules were incised by the patient's physician, evacuated

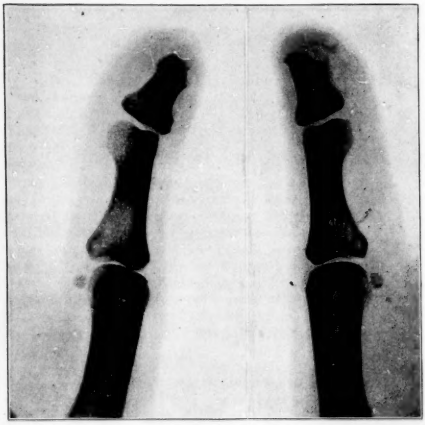


Fig. 2.—Regeneration of phalanges, January, 1917.

and dressed at intervals for this period. Amputation of the terminal phalanges was suggested, but was refused by the family, who at about this time moved to Newark and brought the child to me.

Examination revealed a sinus on the ball of each thumb, and loose bone could be detected on probing. A roentgenogram taken by Dr. C. F. Baker, Dec. 28, 1914, revealed complete destruction of the terminal phalanges of each thumb, extending to the epiphyseal line. There were loose sequestra, in each case, as shown in Figure 1. Under local anesthesia, the sinuses were enlarged and the sequestra removed. This was followed by healing in about three weeks.

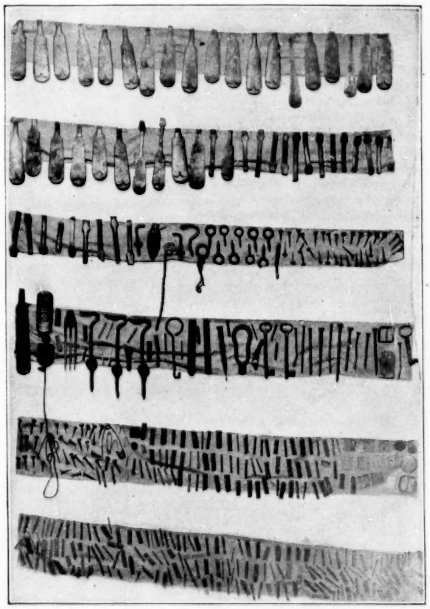
No further attention was given the patient until January, 1917, about two years later, when on examination bone had apparently reformed, and a second roentgenogram (Fig. 2) was taken, showing complete regeneration of the phalanges.

This case seems of particular interest, both from the standpoint of etiology (probably neurologic) and from the end-result.

A CASE ILLUSTRATING FOREIGN BODIES IN THE STOMACH

E. L. ELIASON, M.D., PHILADELPHIA

The patient was operated on in Dr. J. B. Carnett's service at the Philadelphia General Hospital. He was referred from



Foreign bodies removed from the stomach.

the men's nervous ward for operation for acute empyema of the gallbladder. At operation this condition was found, with 213 gallstones. In addition, 452 foreign bodies weighing 3 pounds were removed from the stomach. The patient made a good recovery.

REPORT OF CASE

J. S., man, admitted, June 16, 1917, to the neurologic service of Dr. Charles Potts in a rather pronounced state of melancholia, had a chill, July 4, and his temperature rose to 105 F. Physical examination revealed a rigid abdomen with marked tenderness and rigidity over the upper right rectus muscle. The leukocytic count was 11,800.

When the patient was transferred to the surgical ward the following day, the temperature had fallen to 100, and the rigidity was less. A few days later, because of a return of the symptoms, a further examination of the abdomen was

made. Rigidity and tenderness were again found over the gallbladder. In addition a mass was found with an irregular outline filling the right loin and extending across the abdomen and merging above with the liver. The mass on palpation was found to be movable, and gave the impression of a bag of stones. Dr. R. G. Torrey of the medical service reported the same findings, and further stated that the mass seemed distinct from the liver, but that it could not be clearly outlined on account of muscle rigidity. A hypernephroma of the right kidney was thought of, as was also a retroperitoneal neoplasm. The patient had vomited a rusty brown fluid, which was examined for blood and found negative. No roentgenogram was taken.

July 16, I operated through a modified Martin J-shaped incision. The gallbladder was found enormously distended, greatly infiltrated, and covered with organizing lymph. The duodenum, colon and omentum were closely adherent to it. Filling the entire upper abdomen was a greatly hypertrophied stomach, filled with foreign bodies. The stomach was opened and found to be filled with 452 bodies consisting of nails, pins, tacks, spoons, hooks, glass, forks, etc., as shown in the illustration. The printers' type was wedged so tightly in the pyloric end of the stomach that it had to be picked apart by the finger before it would come loose. The stomach was emptied and closed by a triple tier suture. The gallbladder was next removed and found to be gangrenous and filled with pus and stones.

The patient was drained and returned to the ward. The postoperative course was rather stormy for forty-eight hours, but the patient then improved rapidly. On the third day the patient tried to remove the safety pin from his drainage tube and swallow it.

August 10, the bile drainage had stopped and the wound was almost entirely healed. Roentgenoscopy revealed no foreign bodies in the gastro-intestinal tract. The patient stated that he swallowed the first foreign body just three weeks before operation.

August 14, the patient was out of bed.

August 23, the patient was surgically ready for discharge.

320 South Sixteenth Street.

THE USE OF CALCIUM CHLORID TO PRESERVE MOISTURE IN ANATOMIC SPECIMENS AND CADAVERS

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Assistant Professor of Anatomy, Georgetown University School of Medicine

On account of the high price of glycerin, we began to experiment, about a year ago in the laboratories of Georgetown University School of Medicine, to obtain if possible some other substance to keep anatomic specimens moist. As a result, we have adopted for this purpose purified calcium chlorid.

Brain specimens were first hardened in a 5 to 10 per cent. solution of formaldehyd, for about two months, and then transferred to the saturated solution of calcium chlorid, in which they remained for one week. They were then placed on ordinary dissecting room trays, without any cover, except another tray inverted to keep out the dust, but in no solution whatsoever and without even a damp cloth covering to retain moisture.

These specimens have now been kept in this manner for periods ranging from one to nine months, at ordinary room temperature and during the hot months of a Washington summer.

The specimens are perfectly moist and well preserved, and in these trays are readily accessible for study by the students. The gray and the white matter are to be distinguished better than in fresh brains.

By putting about 2 pounds in the embalming fluid for each cadaver, we have apparently been successful also in keeping them moist during dissection.

1330 East Capitol Street.

Military Medicine and Surgery

TENDON OPERATIONS FOR GUNSHOT INJURIES OF THE HAND

LEO MAYER, A.M., M.D.
NEW YORK

In a recent series of articles[1] I outlined the principles of a new system of tendon transplantations based on the anatomy and physiology of tendons. The essential principle of this system lies in the coordination of each step of the operation with the exact anatomic and physiologic facts, as ascertained by researches on the cadaver, by animal experimentation, and by operations on human beings. Thus, the tension under which the tendon is sutured conforms to the normal tension, a physiologic fact hitherto unknown; the transfer of the tendon from its original bed to the new site follows the laws governing the gliding mechanism of tendons; the implantation of the tendons is such as to assure an anchorage as firm as the normal; even in the postoperative treatment the length of time allowed before exercise is begun is determined by exact experimental data. The results attained by the method, as observed in 250 cases of poliomyelitis and in fifty tendon transfers subsequent to gunshot injuries, justify its employment as a sound surgical procedure.

Fig. 1.—The incisions for transplantation of the flexor sublimis tendon of the index finger for the severed flexors of the middle finger: 1, first incision; 2, second incision.

At the present time a double significance attaches to a rational system of tendon operations. First, there is the large group of poliomyelitis cases in which decided improvement of function can be obtained by tendon transplants; secondly, there will unquestionably, provided the war is not brought to an abrupt conclusion, be a large number of patients with gunshot injuries, on whom similar operations can be satisfactorily performed. That this group of patients will probably represent no small percentage of those to be treated in our American base hospitals is shown by my experience during a three years' service as surgeon to a 500 bed Red Cross base hospital near Berlin, where of 1,400 operations, fifty, or almost 4 per cent., were performed on tendons.

The purpose of this paper is to draw attention to several tendon transplantations hitherto not described, which I have found of service in gunshot injuries of the hand. One of the commonest lesions seen in a base

1. Mayer, Leo: Surg., Gynec. and Obst., 1916, **22**, 182, 298 and 472.

hospital is a perforating wound of the hand, the wound of entrance being located on the palmar aspect, and the larger star-shaped wound of exit on the dorsum. Almost always one or more metacarpal bones are fractured, and the flexor and extensor tendons of one or more fingers are completely severed. Such an injury leaves the patient with a badly crippled hand, since one or more fingers are not merely useless but in the way. Despite the usual demand for amputation of the helpless members, it seemed to me advisable to conserve wherever possible, even though a complete restoration of function could not be hoped for. Therefore, in all cases in which the hand was not irretrievably shattered, I attempted to restore function by means of tendon operations for both the flexors and the extensors. These operations cannot be considered in the same category as the physiologic transplantations described in my previous articles, since from the nature of the injury it is impossible to utilize a tendon sheath as a path for the transferred tendon, and since the transferred tendon must be sutured to another tendon instead of being directly attached to the bone. In other respects, however, they conform to the principles of the physiologic method.

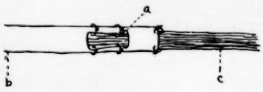

Fig. 2.—Suture of tendon to tendon when overlapping is possible: *a*, button-hole opening; *b*, flexor profundis tendon of the injured finger; *c*, transplanted flexor sublimis tendon.

TECHNIC

The operation for the severed flexor tendons consists in transplanting the sublimis tendon of the adjacent finger and suturing it to the distal end of the injured flexor profundus tendon; that is, two adjacent fingers are thus supplied with the profundus tendons alone, since the one sublimis tendon is converted by the operation into a deep flexor. The steps of the operation, which I always perform under local anesthesia, are as follows:

(For the purpose of illustration I will assume that both flexor tendons of the middle finger have been severed, and that a mass of scar tissue the size of a 50 cent piece occupies the midpalmar region and is densely adherent to the bone.)

The first incision runs from a point 2 inches distal to the annular ligament in a line with the tendons of the index finger to the proximal phalanx of this finger (Fig. 1). The incision is deepened through the palmar fascia, until the sublimis tendon is visible throughout its course.

The second incision is made distal to the scar tissue over the severed flexor tendons of the middle finger; it is about 1½ inches long, slightly bowed, with the convexity toward the little finger, and extends to the base of the middle finger.

The flexor tendons of the middle finger are then dissected free from the adhesions which usually bind them down. The operator must pay particular attention to this step, since adhesive bands frequently extend well into the sheath. When properly freed, gentle traction on the flexor profundus tendon should produce flexion of the finger.

A subcutaneous channel is then bored with a dressing forceps from the proximal end of the first incision to the second incision. This step of the operation is usually rather difficult, owing to the presence of scar tissue. It is better to give the channel a slightly curved direction, since a straight course would necessitate boring between scar tissue and bone; the slight curve tends to be obliterated by the action of the tendon as soon as active motion has begun, whereas boring between scar tissue and bone tends to produce adhesions which nullify the effect of the operation. When a channel sufficiently roomy to accommodate the tendon has been bored, the sublimis tendon of the index finger is divided at the metacarpophalangeal joint, dissected away from the deep tendon, and drawn through the subcutaneous channel as rapidly as possible so as to avoid drying.

The final step of the operation consists in suturing it to the flexor profundus tendon of the third finger. I have applied this suture in two ways. When both tendons are well developed and can be made to overlap for three-fourths of an inch, I make a buttonhole opening in the tendon of the injured finger about a quarter of an inch from its severed end, and thread the sublimis tendon through this opening (Fig. 2); the two tendons are held together by means of from four to six fine interrupted chromic gut sutures so placed as to flatten the tendons against one another. To promote firm fixation of the tendons to another, it is advisable to traumatize slightly the surfaces of the tendons which are brought into apposition.

Another method of tendon suture is indicated if the tendons are friable or cannot be made to overlap. Under these conditions I have found that the first suture method did not give sufficient security. Therefore, after suturing the tendons by means of the Lange stitch (Fig. 3 *A*), I reenforce this suture by transplanting a piece of fascia from the calf. The technic of this procedure when practiced occasions no difficulty. A 3 inch incision is made a hand's breadth above the annular ligament of the ankle and a strip of fascia 2 inches long and 1 inch wide is dissected away from the muscles. Particular care is taken to handle only the corners of the fascia, so as not to injure the loose fatty tissue, which at this point covers the deep surface of the fascia and is of particular importance in facilitating the normal gliding mechan-

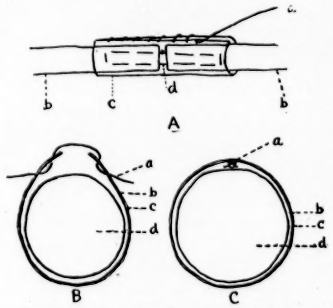

Fig. 3.—Suture of tendon to tendon when overlapping is impossible: *A*, longitudinal diagrammatic sketch showing the Lembert suture in process of application which closes the tube of fascia overlapping the tendons; *a*, Lembert suture; *b*, tendon; *c*, transplanted fascia; *d*, Lange suture. *B*, diagrammatic cross-section of the tendon and transplanted fascia indicating the manner of inserting the Lembert suture; *a*, suture; *b*, fascia (superficial surface turned toward the tendon); *c*, fascia (deep surface turned outward); *d*, tendon. *C*, diagrammatic cross-section of the tendon and transplanted fascia after the Lembert stitch has been drawn taut. Note that the smooth deep surface of the fascia adapted to the gliding function is turned outward: *a*, suture; *b*, fascia (superficial surface); *c*, fascia (deep surface); *d*, tendon.

ism of the muscles and tendons. At each corner of the fascial flap a suture is taken to permit more ready handling.

The assistant grasps two of these sutures, the operator the other two, and in this way the fascia is transferred from the calf to the hand. The sutured tendons are then lifted out of their bed so as to pass two of these fixation sutures beneath them. By means of a continuous Lembert suture the fascia is made to form a tube closely surrounding the sutured tendons

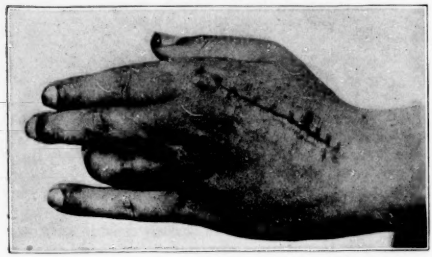

Fig. 4.—The incisions for transplantation of the index finger tendon of the extensor communis digitorum to replace the severed extensor of the ring finger.

(Fig. 3, *A*, *B* and *C*). The fascia is so placed as to turn its glistening deep surface outward; if the Lembert suture has been properly inserted, the point of union of the two tendons is completely hidden by a smooth strong envelop well adapted to a gliding function.

The results obtained by either of these tendon sutures are satisfactory. The first method is, of course, the one of choice on account of its simplicity. The operation is concluded by applying continuous skin sutures.

A similar operation can be performed for the divided extensor tendon, provided the tendon of the extensor indicis proprius has not been injured. It consists in transplanting the tendon of the extensor communis digitorum, which runs to the index finger, to replace the injured tendon. The extensor indicis proprius suffices, I have found, to extend the index finger. A 4 inch incision (Fig. 4) lays bare the index finger tendon of the extensor communis digitorum. A second incision over the severed extensor tendon frees it from the scar tissue which usually holds it adherent to the bone. By means of a subcutaneous channel the substituting index tendon is transferred to its new position and sutured to the injured tendon by one of the methods previously described.

In performing the tendon suture the rule governing the normal tension of tendons must be respected. Research studies[2] on animals have shown that when under narcosis the origin of the muscle and the point of insertion of its tendon are approximated, the tension is zero. In other words, in the case of the flexors of the fingers, when the fingers are passively flexed while the muscle is at rest, the tendons of the flexor muscles show no appreciable tension. Consequently, when the operation is being performed, the tendon should be sutured in such a way as to give just this normal degree of tension.

2. Mayer, Leo: Surg., Gynec. and Obst., 1916, **22**, 196.

AFTER-TREATMENT

In the after-treatment, the most important question is when to begin active exercise of the transplanted tendon. The animal experiments referred to in my previous articles were of comparatively little assistance in deciding the question, since in them the tendon was attached directly to bone, whereas in these operations the tendon was sutured to tendon. By beginning exercise too soon, one ran the risk of tearing the tendons apart before firm union had taken place. By postponing active exercise too long, one permitted dense adhesions to form. In my first case, I began exercise too soon, namely, one week after the operation. The tendons tore apart, and a secondary operation had to be performed. In the second case, in which I waited three weeks, the final result was disappointing because adhesions prevented a free gliding of the tendon. In subsequent cases, I immobilized the tendons for two weeks before permitting function. The best exercises are the voluntary contractions of the patient's muscles. In some cases, when it was difficult to secure the patient's cooperation, I employed a galvanic current to secure the necessary muscular contraction. As soon as about 20 degrees of motion had been secured, the tendon was strengthened by simple resistance exercises. For at least four weeks following the operation, the fingers and hand should be protected by a splint that holds the operated finger in such a way as to remove all tension from the suture. Failure to observe this rule can prove disastrous, as was shown in the case of

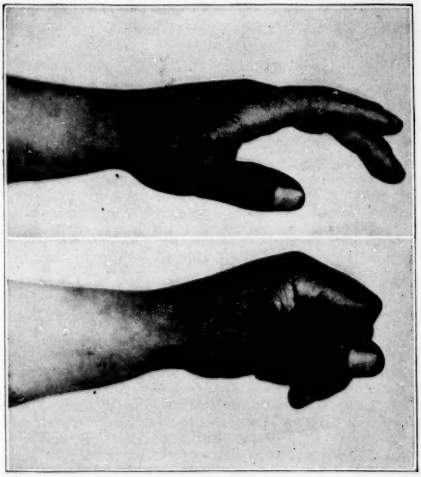

Fig. 5.—The degree of flexion secured by transferring the flexor sublimis tendon of the index finger for the severed flexor tendons of the middle finger; upper, fingers extended; lower, fingers flexed.

one particularly ambitious patient who, contrary to orders, removed the splint while working in the garden two weeks after the operation. He happened to fall on the outstretched finger, and the suture gave way.

The outcome of the operations were satisfactory to my patients although not entirely satisfactory to me. Primary union occurred in all but one case, in spite of

the presence of shell fragments, and extensive scar formation. A complete restoration of function, however, I could not secure. In the most successful cases about 75 per cent. of the normal range of motion returned (Figs. 5 and 6). With this degree of motion my patients were able to use the finger for typewriting, holding pen and pencil, for light farm work, even, as in one case, for playing the piano. As a rule, the operations for the extensor tendon gave better results than that for the flexor. Sacrificing the flexor sublimis tendon produced distinct weakness for six or eight weeks after the operation; practically the normal strength returned when adequate exercise was instituted. The sacrifice of the extensor tendon of the index finger was scarcely noticed by the patients.

As stated before, these tendon operations on the hand are not ideal physiologic procedures. They represent an attempt to improve a desperate condition by a conserving method instead of ruthlessly sacrificing the entire finger. In the eyes of the patient the discomfort of the operation was fully repaid by the partial restoration of function. To the surgeon interested in tendon work these cases should form an incentive to further study, and to the perfection of a technic that will give

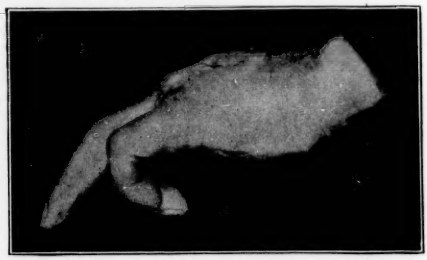

Fig. 6.—The extension made possible by transfer of the extensor tendon of the index finger (extensor communis digitorum) after complete division of the extensors of the ring finger. (The same hand is shown in Figure 4.)

a more complete restoration of the normal tendon motion than I have been able to secure in this first series of operations.

41 West Eighty-Third Street.

War Activities for Antituberculosis Associations.—The National Association for the Study and Prevention of Tuberculosis has made suggestions for a course of action to be followed by state, county and community tuberculosis associations with reference to men drafted for the Army. These suggestions were formulated as the result of conferences with Army officers, public health officials, Y. M. C. A. and other organizations engaged in war work. They have been found practicable in four of the cantonments where action has been taken to carry them out. They include the procuring of a record of men rejected for service in the Army because of tuberculosis or suspected tuberculosis; those rejected by local examining boards, rejected applicants for enlistment in the United States Marine Corps and those rejected by regimental surgeons in the camps and cantonments; follow-up work for all cases discovered, which would include the work of visiting nurses, who should be asked to make a survey of families of rejected conscripts; educational work for soldiers which would include the distribution of pamphlets and folders, lectures and talks in connection with the entertainments provided by the Y. M. C. A., the Knights of Columbus, etc., which would include motion picture reels, medical talks, etc.

CARDIOVASCULAR LESIONS AND TUBERCULOSIS

METHODS AND RESULTS OF EXAMINATIONS BY THE CARDIOVASCULAR AND TUBERCULOSIS COMMISSION AT THE SECOND PLATTSBURG TRAINING CAMP FOR RESERVE OFFICERS

ALBERT P. FRANCINE, M.D., PHILADELPHIA
Captain, M. R. C., U. S. Army
CAMP GORDON, ATLANTA, GA.
J. WOODS PRICE, M.D.
First Lieutenant, M. R. C., U. S. Army
AND
FRANCIS B. TRUDEAU, M.D.
First Lieutenant, C. S., U. S. Army
SARANAC LAKE, N. Y.

On account of the military roster, we were assigned for examination one company a day, averaging 135 men. Each member of the board examined his third of this number, and any men found with signs in heart or lungs deviating from the normal were held up for combined study by the board.

In beginning our work we had no very definite plan to follow, except that our instructions, as to what would disqualify from active service or require a recommendation for special service, were plainly set forth in the very definite and excellent circulars, Nos. 20 (for tuberculosis) and 21 (for cardiovascular conditions) of the War Department, Surgeon-General's Office.

METHODS

The men in each company were assigned to us in groups of ninety in the afternoon, reporting at 1:30 p. m., and the remaining forty or forty-five men next morning, reporting at 10 a. m. The holdups from the previous day, of whom there were usually from five to ten, were reexamined by the board between 8:30 and 10 a. m. daily.

These groups reported to a sergeant in a large locker room and dormitory adjoining the three small examining rooms (bedrooms), and he entered on the form below their name, age, company and regiment. Then each examiner took a group of five men to his room and proceeded with their examination. Each examiner had a medical orderly who acted as clerk and filled in the accompanying form from dictation.

After some experimenting, we finally fixed on the following routine:

1. The five candidates were lined up and their pulses taken, standing and before undressing.

2. Then they stripped to the waist, and each man was inspected for abnormal pulsations, the character and location of the maximum heart impulse was determined, and the boundaries of the heart were outlined by percussion.

3. Then the whole five were made to exercise for about half a minute by marking double time and at the same time driving their arms forward and back, and at the command of "Halt" the examiner went down the line ausculting with care each man's heart. If when he reached a man his heart had already quieted down, he was made to exercise again. But with five men, the amount of exercise indicated was usually sufficient to keep the last man's heart well accelerated by the time he was reached. It was for this reason that we finally fixed on a group of five men and because better order and quiet could be maintained, than with a larger number, and it was also easier for the orderly at the desk.

4. Following the examination of the heart, the examiner proceeded with that of the lungs, confining this to thorough auscultation after cough and on deep inspiration. When any

deviation from the normal was found in heart or lungs, the examiner did not attempt to study the condition thoroughly, but told the man to report at 8:30 next morning for study by the combined board.

5. Each man was told to dress as the examination of his lungs was completed, and his pulse was again recorded before he left the room.

FORM FOR RECORD OF EXAMINATION

Name:	Age:	Company:	Regiment:
Pulse rate, dressed, standing:		Abnormal pulsations:	
Maximum heart impulse:		Thrills:	
Cardiac boundaries, left:		Right:	
Accentuations:		Arrhythmias:	
Pulse rate, after dressing:		After resting, if above 112:	
Lungs:			

After a little experience, we found that it took about twenty minutes to examine satisfactorily these groups of five men. This allowance of time can, of course, be cut down to twelve or fifteen minutes by not counting fully and not recording the pulse, except in those cases in which it is palpably rapid, or very slow. But we feel that in this work, which is exacting and in which one must remain standing and alert, the faster work is not compatible with the concentration and thoroughness which is its fundamental purpose. It also spoils the interest of the work, and it becomes a mere grind, for the work is interesting if done without rushing, and in the large number of men examined one may expect at any time to come on an interesting lesion, as will appear from the subjoined report. Hence, we do not feel that a man can do this work right, day in and day out, and work more than six hours a day.

At times we did more than this. We had to complete the examination of a company of coast artillery, which had been suddenly ordered away, 180 men in all, in one morning; and then went on with our ninety men in the afternoon, 270 men that day, or ninety men for each examiner. But it would have been impossible to have kept this pace up, nor did we in the case of the artillery men attempt to record the pulses or even to count them, but quickly satisfied ourselves that the rate was not abnormally rapid or the reverse. We think the strain and hurry showed in another way, for whereas we held up, for further study, as a rule, from five to ten men out of every company of 135 or 140 men, out of this battery of 180 men, we held up only two men at the end of the morning's work. Our examination, therefore, was probably not so thorough.

Again, a certain group of seven of the companies could be assigned to us only in the afternoons, so that their examination had to be completed then, averaging forty-five men for each examiner, with no work at all in the mornings. This we found an unsatisfactory arrangement.

From our experience, therefore, we would conclude that a full day for an examiner doing this work in a routine manner and thoroughly would be forty-five men in the afternoon and twenty men in the forenoon. This would not include the holdups, who would report to the board for study before the individual examinations began. In other words, about sixty-five men a day for each examiner and the holdups to be studied by the board is a full day's work. An outside limit would be forty-five men in the afternoon and thirty in the forenoon, or seventy-five new men a day for each examiner.

In regard to the holdups, it is very important that any lesions in the heart and lungs, even though not sufficient to disqualify, be carefully noted and reported to the Surgeon-General, in view of a possible future claim for pension for disability in line of duty.

While the foregoing does not seem numerically a great deal, or the hours very long, yet when one comes to standing on one's feet for six hours and ausculting hearts and lungs continuously day in and day out, and doing it with attentiveness, for one must neither lag nor grow inattentive, it makes a very adequate and even exacting working day.

RECOMMENDATIONS

We feel that:

1. Six hours a day is a full day for this work if done as a routine.

2. The new men should be examined in groups of five by each examiner working separately.

3. It should not take more than twenty nor less than fifteen minutes to complete the examination of these groups of five men for cardiovascular lesions and tuberculosis.

4. Each examiner should examine not less than sixty nor more than seventy-five new men a day.

5. The holdups from the previous day should report next morning for reexamination by the entire board, if the board is a small one, and this should constitute the first work of the day. Of course the holdups from each morning and afternoon period can be reexamined by the board immediately after the individual examinations on the same day. This has the advantage of not requiring the return of the holdups the next morning; it has the disadvantage of the examiners' not being fresh at the end of the afternoon's work, and there is the disadvantage of the candidate's not being fresh, as he is after a night's rest.

6. When the board is a large one, for instance, fifteen or twenty medical officers, the president of the board should select two other members to act with him as a clearing committee to whom all the holdups should be referred for final disposition. This insures uniformity of judgment and good order. The whole time of this committee will be occupied in keeping up with the holdups of the ten or more officers who are doing the routine examinations, and in the clerical work involved. The holdups of the other examiners for each day should report the following day to the clearing committee, divided, if numerous, into two groups, one in the morning and one in the afternoon.

7. The assignment of the men to the examiners should not be confined to company divisions because time is thereby lost all around; but assignment should be made by fixed numerical groups, the guiding factor being the quota stated above for each examiner. Thus three examiners, who are also doing the holdups, should be assigned sixty men in the morning, and 135 men in the afternoon, a total of 195 men, or in round numbers 200 men a day, as the extra five men could readily be added to the morning's quota of sixty. Or if the men must be assigned by companies, then the number of examiners should be adjusted to these numerical groups. In our case, with four examiners working, we could have examined two companies daily, whereas three examiners did not have quite enough to do taking one company a day, and yet could not possibly have taken two, in addition to the holdups. Where the companies number 250 men, four examiners should be assigned for each company, or according to this ratio. Thus, sixteen examiners should complete 1,000 men a day, but this board should total nineteen officers, three for the holdups.

8. There should be out of a group of 200 men, as a rule, from five to fifteen holdups daily (in the class of men in camps for reserve officers) to be studied by the board next morning.

9. The holding up of a man in this way does not in any sense mean his disqualification, and this should be explained

to him, but is simply in order that his condition may be adequately studied, and a detailed report noted for transmission to the Surgeon-General at the final completion of the examinations.

RESULTS

The holdups resolved themselves into two groups, those that had to be written up, and those that could be readily passed. Of the latter the great majority had rapid pulses. There is a wide variation of rate according to the time of day, and the character of the military exercises or drills to which the men have been subjected previous to the examinations. In the morning, the pulses as a rule ran in slow rhythm, or when the men had been doing map making or signal corps work. These averaged between 64 and 74 standing, and between 74 and 84 following the exercise test (after dressing). But in the afternoon, after a hurried or heavy lunch or a morning's hard drill, we found the majority varying between 84 and 100, and many above 100, even 120, before exercise test. The latter offered some difficulty, because even after sitting or lying down while the examiner continued with his work, many of them could with difficulty be counted below 100 (a persistent rate of 100 or above disqualifies). Accordingly, we were forced to send quite a number to the hospital for hourly observation of the pulse before we could let them go. Following this method in the more thorough search for an etiologic factor, we disqualified two candidates (Cases 1 and 3).

There is also to be taken into consideration the factor of nervousness as a cause for rapidity of pulse. Generally speaking, this played a minor rôle with the men we examined, although they were in many instances fearful of the result of the examination on account of their earnest desire to serve. There was very little effect of nervousness noted in the men who came in the morning; and as stated above, there were the other more obvious factors for acceleration of pulse rate in the men who came in the afternoon. Usually, when nervousness was a factor, a little rest brought the pulse down, or it was down when the candidate was reexamined next morning. This was true in every instance but one (Case 16), and this candidate was finally passed for active service in the absence of definite cause.

We discovered also a number of murmurs, systolic in time, in the pulmonary area and in the third and fourth interspaces to the left of the sternum, the area of auscultatory romance of Balfour. There were sixteen out of 3,134 candidates, or 0.51 per cent. These murmurs are striking, and their pathogenesis an interesting academic question; but clinically, in the absence of enlargement of the heart and accentuations, and with good response to the exercise test, they are not of particular significance, though they should be reported. Case 14 is a good example. They are not infrequent in long chested types, but occur also in big, well formed thoraces, and are not uncommon in early adult life.

There were also a number of men who developed after exercise a functional systolic murmur at the apex, transmitted into the axilla. Their hearts were, however, organically normal, and their response to exercise and pulse rate good. These were passed, and numbered fifteen out of 3,134 cases, or 0.47 per cent. Case 12 is an example.

We found also a number of cases in which the maximum impulse of the heart was in the sixth interspace when standing, but frequently in the fifth when recumbent, and inside the nipple line and normal in character, without enlargement of the heart. Of these there were passed for active service, but reported, seventeen out of 3,134 cases, or 0.54 per cent. Case 15 is illustrative.

There was one very interesting case of total bradycardia (Case 17). There was one case of idiopathic dextrocardia; and there were several cases of moderate hypertrophy in athletes, without valvular lesion.

Another large group was temporarily held up on account of "colds" and râles in the chest. Acute bronchitis was quite prevalent, indeed, almost universal in the earlier period of the camp, though not all showed râles. The three members of the commission took an active, resonating and synchronous part in this general infection. The differentiation, however, between bronchitic râles and tuberculosis offers no great difficulty, and a little study cleared up this group of holdups.

There were the usual findings of atelectatic râles at the apexes, and the so-called marginal râles at the bases in front; but in these cases the men were not as a rule even held up, unless the râles were unduly persistent.

In regard to the organic cardiovascular lesions found, and the causes for disqualification, or recommendation for special service, and in regard to the similar regulations as applied to tuberculosis, the report of the individual cases is the best exemplar. We feel that the practitioner of medicine or any one interested in this subject would do well to familiarize himself with circulars of the War Department, Surgeon-General's Office, Nos. 20 and 21, which are brief, explicit and illuminating.

CARDIOVASCULAR DISEASES

TABLE 1.—RESULTS OF CARDIOVASCULAR EXAMINATIONS OF CANDIDATES

	Number	Per Cent.
1. Candidates in reserve officers' training camp examined	3,134	.....
2. Accepted	3,124	99.06
3. Disqualified because of cardiovascular lesions	4	0.127
4. Recommended for special service but allowed to continue course at training camp	4	0.127
5. Passed for active service, but with functional lesions reported	51	1.62
6. Found with cardiovascular (organic) lesions (3 and 4 above)	8	0.255

The following four candidates were disqualified for active service and recommended for discharge:

CASE 1.—*Physical Findings.*—S. G. E., aged 23, was remanded to the hospital for study of the pulse rate, where during six days' observation it was with few exceptions persistently above 100, averaging over 120 per minute. There was bilateral enlargement (moderate) of the thyroid, with a fine tremor of the head. There was no marked tremor in the hands or the fingers on extension. The heart was normal in size and there were no murmurs. There was little dyspnea after the exercise test, but the pulse rate was excessively rapid and there was palpitation of the heart.

Diagnosis.—Hyperthyroidism.

The candidate was disqualified for active service.

CASE 2.—*Physical Findings.*—G. H. B., aged 36, an artist, could not keep up with the work. Double time caused serious dyspnea and faintness. He could control himself only by sitting down and holding his head between his knees. He had a chronic cough. He was poorly developed and of slight physique. The heart was overacting and very irritable. The pulse was regular but rapid. The heart boundaries were normal. The man developed marked dyspnea after exercise. Breathing was very labored. The facies was anxious.

Diagnosis.—Myocardial insufficiency.

The candidate was disqualified for active service.

CASE 3.—*Physical Findings.*—F. L. M., aged 29, was of nervous type. After five days in the hospital the pulse remained persistently over 100, remaining between 88 (once), 112, 128 and 132, most frequently 128. He stated that he stood the work well. The heart apparently was normal. There was no evidence of hyperthyroidism or tuberculosis.

Diagnosis.—Persistent tachycardia.

The candidate was disqualified for active service.

CASE 4.—*Physical Findings.*—E. W., aged 47, had an area of definite dulness to the right of the arch in the second and third interspaces, with expansile pulsation, unequal pulses and some arteriosclerosis. There was no tracheal tug. The heart was hypertrophied and dilated, with the left boundary two finger breadths outside the nipple line, with diffuse and heaving impulse. There were no murmurs, but the sounds lacked muscle tone. There was passive congestion of both bases. In the urine, red and white blood cells and albumin were present.

Diagnosis.—Aneurysm of arch; dilatation of heart with failing compensation.

The candidate was disqualified for active service.

The following five candidates were recommended for special service, though it should be understood that as Plattsburg was a training camp for line officers, a recommendation for special service was, as a rule, tantamount to disqualification for active service, to the extent at least that the candidate in question could not, even if he completed his training, receive a commission as a line officer. As a matter of fact, however, there might be occasional demands for special service. For instance, the commanding officer was asked to nominate a small group of men for balloon service in connection with liaison work; and through the kindness of the camp surgeon, Candidate 5 was allowed to take this service. He was extremely anxious to do something, and though at first disqualified for active service, he never left camp.

CASE 5.—*Physical Findings.*—M. A. L., aged 35, had been a professional singer and later a musical manager. He was quite fat, and nervous and anemic. The heart was much enlarged to the left, the boundary being two finger breadths outside the nipple line, with the maximum impulse diffuse and heaving. There was no murmur nor accentuations. Response to exercise was poor. He showed considerable dyspnea after the exercise test. The pulse was very rapid. The urine and the Wassermann test were negative.

Diagnosis.—Hypertrophy and dilatation of heart.

The candidate was disqualified for active service and recommended for special service.

CASE 6.—*Physical Findings.*—R. P. C., age 30, big chested and of athletic type, had been through the last camp and stood the work excellently. The left boundary of the heart was one finger's breadth outside the nipple line with the impulse under the nipple. It was forcible but not heaving. There was a loud systolic murmur heard at the apex and transmitted to the axilla. There was accentuation of the second aortic sound. The man had had acute articular rheumatism in 1902.

Diagnosis.—Mitral regurgitation.

The candidate was recommended for special service, and allowed to continue training at Plattsburg.

CASE 7.—*Physical Findings.*—J. W. M., aged 22, gave a history of an acute heart attack following a 2 mile race from which he was in bed three months with fever and rheumatic pains. This was seven years ago. He was of a big athletic type, and had been a track man at college. There was a loud systolic murmur, heard at the apex and transmitted to the axilla and back. The heart was not enlarged. There was no accentuation of second sounds. Response to exercise and pulse rate was good.

Diagnosis.—Mitral regurgitation without enlargement of heart, and well compensated.

The candidate was recommended for special service, and allowed to complete training at Plattsburg. He was subsequently passed for active service by Major Janeway, and so is not included in figures for candidates recommended for special service.

CASE 8.—*Physical Findings.*—L. R. B., aged 26, had a distinct presystolic murmur with a very sharp first sound over the maximum heart impulse, with the right boundary one finger's breadth to the right of the sternum. He had slight dyspnea after the exercise test, but his general condition was good; he was big and powerful, and had played on a varsity football team.

Diagnosis.—Mitral stenosis.

The candidate was recommended for special service, and allowed to complete training at Plattsburg.

CASE 9.—*Physical Findings.*—C. A. W., aged 24, had an enlarged heart. The left border was one finger's breadth outside the nipple line. The impulse was under the nipple, forcible but not heaving. There was a systolic murmur in the third interspace to the left, transmitted upward and heard at both the pulmonic and the aortic areas, less at the aortic. Response to exercise was good. The pulse rate was within normal limits.

Diagnosis.—Aortic stenosis.

The candidate was recommended for special service, and allowed to complete training at Plattsburg.

In regard to the candidates showing functional or accidental murmurs, or who showed nonsignificant deviations from the normal, of whom there were fifty-one out of 3,134, or 1.62 per cent., the following case reports are quoted as illustrative. These candidates were all passed for active service following the rulings laid down in Circular 21, War Department, Surgeon-General's Office.

CASE 10.—*Physical Findings.*—W. H. G., aged 26, had a malformed chest resulting from a fall from a bicycle in childhood. The heart boundaries were normal, except that the maximum impulse was in the sixth interspace standing, returning to the fifth interspace when prone. There was a soft systolic whiff at the apex, localized to the bell of the stethoscope, heard under all conditions except at full inspiration. There were no accentuations. Response to exercise and pulse rate was normal.

Diagnosis.—Accidental murmur. Motile heart.

The candidate was passed for active service.

CASE 11.—*Physical Findings.*—J. W. B., aged 28, had a long chest and a motile heart. The boundaries of the heart were normal, but the maximum impulse was in the sixth interspace, standing, and the fifth interspace, prone. It was normal in character. When the candidate was standing, without exercise, no murmur was heard. After exercise, a fairly loud systolic murmur developed which was heard at the apex, in the axilla and in the back. This was heard also in the third and fourth interspaces to the left of the sternum, both on full inspiration and on expiration. Response to exercise was very good, and the pulse rate was normal.

Diagnosis.—Functional mitral systolic murmur.

The candidate was passed for active service.

CASE 12.—*Physical Findings.*—C. S., aged 30, had a systolic murmur at the apex after exercise and transmitted into the axilla. The heart was normal in size. The pulse rate and response to exercise were normal. The murmur was not heard when the man was quiet. There were no accentuations.

Diagnosis.—Functional mitral systolic murmur at apex.

The candidate was passed for active service.

Out of 3,134 candidates, there were fifteen cases, or 0.47 per cent., showing functional systolic murmurs at the apex.

CASE 13.—*Physical Findings.*—W. W. C., aged 29, was tall, very thin, flat and long chested, with a marked funnel shaped depression. The heart was normal in size and action. The apex beat was normal and not heaving. There was heard a systolic murmur, loudest in the third and fourth interspaces left of the sternum and in the pulmonary area, but also heard over the aortic cartilage, and also heard very faintly if at all in the vessels of the neck. After the exercise test this murmur became loud and was not altered by posture, and was heard best on full expiration, and faintly on full inspiration. Response to exercise was very good. The pulse rate and the blood pressure were normal, and the urine was negative.

Diagnosis.—Accidental murmur, probably cardiorespiratory.

The candidate was passed for active service.

CASE 14.—*Physical Findings.*—W. W. B., aged 25, when quiet heart sounds were apparently normal, as were the boundaries, except that the maximum impulse was in the sixth interspace standing, and the fifth interspace reclining. Following exercise there was heard a systolic murmur best in the third interspace to the left of the sternum, transmitted upward and heard both over the pulmonary and the aortic regions. It was very faintly heard on full inspiration. There was good response to exercise, and the pulse rate was normal.

Diagnosis.—Cardiorespiratory murmur. Motile heart.

The candidate was passed for active service.

Out of 3,134 candidates, there were sixteen, or 0.51 per cent., showing cardiorespiratory murmur.

CASE 15.—*Physical Findings.*—G. T. R., aged 22, showed the maximum impulse in the sixth interspace, on standing. It was normal in character. Response to exercise, and the pulse rate were normal. The heart was normal in other respects. The blood pressure was normal.

Diagnosis.—Motile heart (ptosis).

The candidate was passed for active service.

Out of 3,134 candidates, there were seventeen cases, or 0.54 per cent., in which the maximum impulse of the heart was in the sixth interspace, with the heart normal.

CASE 16.—*Physical Findings.*—F. H. D., aged 26, was well developed and nourished, but of nervous type. He was in the hospital four days for study of the pulse, which at times was below 100, but was often 120 or above while standing. The pulse leaped rapidly as soon as, or soon after, the radial artery was palpated. The left boundary of the heart was in the nipple line. The maximum impulse was normal in character. No murmur, no exophthalmos and no enlargement of the thyroid were observed. In the fingers extended there was a fine but not exaggerated tremor.

Diagnosis.—Paroxysmal tachycardia, due to nervousness.

The candidate was passed for active service.

CASE 17.—*Physical Findings.*—J. O. P., aged 23, had a pulse rate on standing of from 36 to 40, on three separate examinations one week apart. The ventricular impulse was conveyed regularly to the radials. The heart was normal in size; there were no murmurs nor accentuations. After exercise there developed a slight arrhythmia, which consisted in occasional interpolated extrasystoles. There were no pulsations in the veins of the neck, and no evidence of sets of waves in the jugular for each pulse beat. Except for the arrhythmia, there was good response to exercise. The candidate had been an athlete, playing on the Princeton varsity football team four years without being substituted for, and being chosen for the All America eleven. There was no history of syncopal attacks, and he went through the last camp well and was not held up for physical disability. He was big and powerful, and

appeared in splendid condition. The urine and the Wassermann test were negative.

Diagnosis.—Total bradycardia.

The candidate was passed for active service.

This interesting case gave the board some concern, because it strongly suggested heart block, and heart block disqualifies. It even disqualifies in the French army, where of course the physical standards for acceptance are reduced to rock bottom. We therefore consulted Major Theodore C. Janeway of the Surgeon-General's staff, under whose supervision the board was acting, and after advice from him and further study of this candidate we felt that his condition was one of total bradycardia and not heart block, and so passed him for active service.

The organic cardiovascular lesions found in the examination of 3,134 candidates were:

Hyperthyroidism, Case 1.
Myocardial insufficiency, Case 2.
Persistent tachycardia, Case 3.
Aneurysm of arch, Case 4.
Hypertrophy and dilatation of heart, Case 5.
Mitral regurgitation, Cases 6 and 7.
Mitral stenosis, Case 8.
Aortic stenosis, Case 9.

The principal accidental or functional conditions found, not disqualifying, were:

Cardiorespiratory murmurs, in sixteen cases, or 0.51 per cent.
Functional systolic apical murmurs in fifteen cases, or 0.47 per cent.
Apex of heart in sixth interspace, increased motility or so-called ptosis of heart, in seventeen cases, or 0.54 per cent.
Many rapid pulses, and one case of apparent paroxysmal tachycardia due to nervousness.
A very interesting case of total bradycardia.
Several hypertrophied hearts in athletes, etc.

It is interesting to compare with the statistical scheme given in Table 1, the corresponding results obtained by the board in examining 584 enlisted men of the Regular Army, who were stationed at Plattsburg Barracks. These included 421 men of the Sixteenth U. S. Field Artillery, ninety-three men of Troop I, Second Cavalry, and seventy men of the Army Medical Corps (Table 2).

TABLE 2.—RESULTS OF CARDIOVASCULAR EXAMINATIONS OF REGULARS

	Number	Per Cent.
Examined	584	.....
Accepted	582	99.65
Disqualified for cardiovascular lesions	1	0.17
Recommended for special service	1	0.17
Found with organic cardiovascular lesions	2	0.34

Thus the percentage of organic cardiovascular lesions among the candidates for reserve officers was 0.255, while among the enlisted men of the Regular Army it was 0.34. But, as we shall see later, the percentage of tuberculosis among the regulars was much higher than among the candidates.

TUBERCULOSIS

TABLE 3.—RESULTS OF TUBERCULOSIS EXAMINATIONS OF CANDIDATES

	Number	Per Cent.
1. Candidates in reserve officers' training camp examined	3,134	.....
2. Accepted	3,121	99.58
3. Disqualified because of tuberculosis	8	0.255
4. Recommended for special service, but allowed to continue course at training camp	2	0.063
5. Passed for active service but with healed lesion reported	3	0.095
6. Found to be tuberculous	13	0.414

The following eight candidates were disqualified for active service and recommended for discharge:

CASE 18.—*Physical Findings.*—W. D. C., aged 22, had many fine râles on cough to the third rib and the fifth vertebral spine on the right. Note was impaired and breathing was bronchovesicular over this area. Roentgenoscopy[1] revealed a definite lesion at the right apex extending to the third rib and fifth vertebral spine, involving the parenchyma and the root of the lung.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was disqualified for active service.

CASE 19.—*Physical Findings.*—J. M. W., aged 24, had fine dry râles from the apex to the fourth rib on the left, and about the same on the right, heard posteriorly to the fifth vertebral spine. Roentgenoscopy revealed, on the right, scattered parenchymatous infiltration to the second rib and the fifth vertebral spine. Many fibrous strands extended from the root toward the axilla. Through the lower two thirds were a few isolated, scattered tubercles. On the left, scattered through the upper half of the lung, were numerous small, calcified tubercles. These were more conglomerate in the apex, and were characteristic of a parenchymatous infiltration to the second rib and the fifth vertebral spine. Many fibrous strands extended from the root toward the axilla.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was disqualified for active service.

CASE 20.—*Physical Findings.*—J. B. G., aged 27, had fine dry râles on cough at the right apex extending to the third rib in front and to the fifth vertebral spine posteriorly, and also a few at the top of the left apex. Note was impaired on the right, and breathing was bronchovesicular. Definite lesion as indicated on the right was confirmed by roentgenoscopy.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was disqualified for active service.

CASE 21.—*Physical Findings.*—A. L. B., aged 26, had fine dry râles on cough at the right apex to the second rib and the fifth vertebral spine. Note was impaired and breathing was bronchovesicular. A tuberculous lesion involving this area was confirmed by roentgenoscopy.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was disqualified for active service.

CASE 22.—*Physical Findings.*—M. C. L., aged 27, had fine dry râles on cough in left apex to the third rib and the fourth vertebral spine; and in the right apex, above the clavicle. Note was impaired and breathing was bronchovesicular over these areas. Tuberculous infiltration of the areas outlined on both sides was confirmed by roentgenoscopy.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was disqualified for active service.

CASE 23.—*Physical Findings.*—E. C. F., aged 30, had fine dry râles on cough at both apexes, with impaired note and bronchovesicular breathing. Râles on the left extended to the third rib and the fifth vertebral spine; on right, to the second rib and the fourth vertebral spine. Roentgenoscopy confirmed these findings.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was disqualified for active service.

CASE 24.—*Physical Findings.*—S. F., aged 36, had fine dry râles at both apexes to the third rib and the sixth vertebral spine. Note was impaired and breathing was bronchovesicular. Roentgenoscopy confirmed tuberculous infiltration in these areas.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was disqualified for active service.

CASE 25.—*Physical Findings.*—A. F. B., aged 34, had an area of unresolved pneumonia at the left lower lobe posteriorly, about the size and (apparent) thickness of a man's hand; also a small area of consolidation in the right base posteriorly. Sticky râles, pectoriloquy and bronchial breathing were present over these areas, with friction in the left axilla. Roentgenoscopy confirmed findings, and the complement fixation test was positive for tuberculosis. The Wassermann test was negative. There were no symptoms, and the general condition seemed good. The candidate spoke German and was a reporter on the German front earlier in the war. He was an available man for intelligence service.

Diagnosis.—Unresolved pneumonia due to tuberculosis.

The candidate was disqualified for active service at the Plattsburg training camp, but recommended for special service after cure.

In the following two cases, the candidates were allowed to continue their training at Plattsburg, but were recommended for special service in this country afterward:

CASE 26.—*Physical Findings.*—H. B. G., aged 26, had fine râles on cough above the third rib on both sides. Breathing was soft and vesicular. The general condition appeared fine, and there were no symptoms. The candidate was an athlete and competed in running races at the camp the preceding week. Roentgenoscopy revealed: On the right, scattered parenchymatous infiltration to the third rib and, the sixth vertebral spine, with a questionable area of parenchymatous involvement along the descending trunks; some evidence of fibrosis in the apex; probable pleurisy in the apex, some of which appeared to be interlobar. On the left: scattered parenchymatous infiltration to the third rib and the sixth vertebral spine, with rather much evidence of fibrosis in this region; pleurisy at the base, with diaphragmatic adhesions.

Diagnosis.—Old chronic pulmonary tuberculosis.

The candidate was allowed to continue training, but recommended for special service afterward in this country.

CASE 27.—*Physical Findings.*—G. S. C., aged 28, had dry râles and coarse friction at the right apex, and râles below the clavicle to the second rib. Roentgenoscopy revealed a lesion in this area extending to the second rib and involving also the peribronchial area. The candidate was well nourished, and his physical condition was good.

Diagnosis.—Old chronic localized tuberculous lesion.

The candidate was passed for active service at the Plattsburg training camp, but recommended for special service in this country afterward.

1. As facilities for roentgen-ray work were not fully completed at the post hospital, the examinations were gratuitously made at the Adirondack Cottage Sanatorium; Dr. E. R. Baldwin kindly gave us a clinical report on some of the cases.

In the following three cases the candidates were found to have localized and well healed lesions, and were passed for active service.

CASE 28.—*Physical Findings.*—W. P. H., aged 28, had a cold, but on two separate examinations (after two weeks), fine dry râles were heard above the left clavicle, breathing soft. He had been an athlete, and appeared wiry and strong. There was no cough nor symptoms.

Diagnosis.—Old localized pulmonary tuberculosis.

The candidate was passed for active service.

CASE 29.—*Physical Findings.*—H. R. D., aged 28, had fine râles at the left apex, below and above the clavicle and to the third vertebral spine on the left side. Roentgenoscopy revealed cloudiness of the left apex to the second rib.

Diagnosis.—Old healed tuberculosis lesion, left apex.

The candidate was passed for active service.

CASE 30.—*Physical Findings.*—T. C. B., aged 29, had fine small dry râles at the left apex to the second rib, and slight impairment of note. Roentgenoscopy revealed two calcified tubercles and slight cloudiness at the apex. The general condition was good. The candidate was strong and well nourished. There were no symptoms.

Diagnosis.—Old localized tuberculosis.

The candidate was passed for active service.

It may be pointed out in regard to the preceding group of cases that they represent a type not usually seen even by the so-called tuberculosis expert, because the men were to all appearances robust and athletic, for the most part; and practically all were free from any symptoms whatsoever that would draw attention to their condition. Their lesions, as a matter of fact, had been overlooked in previous physical examinations, of which each had passed several, before coming before the board; and it is extremely likely that the ordinary wear and tear of civil life would have failed to light up or activate their infection. The cases were in no sense early or incipient; they were not the usual type of incipient case that the tuberculosis specialists see, in which a person has spit a little blood, or lost a little weight, or had a night sweat or two, who has had, in a word, some symptom, however slight, which arouses his own suspicions and leads him to consult a physician, with the consequent discovery of a limited active process. They belonged to the relatively large group too large, which the general practitioner would discover if he carefully auscultated the lungs of all patients consulting him for other and trivial ailments. The lesions in every case were sufficiently plain to be revealed by ordinarily careful work.

There can be no doubt that the lesions in every case represented a much earlier childhood infection, which had failed to become acutely active; and it seems likely that the fine dry râles on cough which were elicited represented a subacute recrudescence caused by the intensive training and hard living. Such men from the point of view of their own welfare might and probably would run an unsafe risk if subjected to the exposure, fatigue and privation of active campaigning. They would certainly be an unsafe risk from the point of view of the government.

Finally, it is interesting to compare the percentage of tuberculosis among the candidates (Table 3) with the corresponding figures for the regulars that we examined (Table 4).

TABLE 4.—RESULTS OF TUBERCULOSIS EXAMINATIONS OF REGULARS

	Number	Per Cent.
Enlisted men examined	584	.....
Accepted	578	98.97
Disqualified because of tuberculosis	5	.85
Recommended for special service	1	.17
Found to have tuberculosis	6	1.027

It will thus be noted that among the candidates, the percentage of tuberculosis was 0.41 per cent., while among the regulars examined it was 1.027 per cent., or more than twice as high.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ARSPHENAMINE.* — $HCl.NH_2.OH.C_6H_3.As:As.C_6H_3.OH.NH_2.HCl+2H_2O$. — The hydrochloride of 3-diamino-4-dihydroxy-1-arsenobenzene, corresponding to 31.57 per cent. arsenic (As).

Actions, Uses and Dosage.—The same as those of salvarsan (see New and Nonofficial Remedies, 1917, p. 45).

Arsenobenzol (Dermatological Research Laboratories).—A brand of arsphenamine.

Manufactured by the Dermatological Research Laboratories, Philadelphia Polyclinic, Philadelphia, Pa.

Arsenobenzol (Dermatological Research Laboratories) 0.4 Gm. Ampules.—Each hermetically sealed ampule contains 0.4 Gm.

Arsenobenzol (Dermatological Research Laboratories) 0.6 Gm. Ampules.—Each hermetically sealed ampule contains 0.6 Gm.

Salvarsan.—A brand of arsphenamine.

Manufactured by Farbwerke-Hoechst Co., New York. U. S. patent No. 986,148 (March 7, 1911; expires 1928). U. S. trademark No. 40,734.

Salvarsan 0.6 Gm. Tubes.—Each hermetically sealed tube contains salvarsan 0.6 Gm. (9 grains).

* The Federal Trade Commission adopted the name arsphenamine as the term to apply to 3-diamino-4-dihydroxy-1 arsenobenzene first introduced as salvarsan. The Council on Pharmacy and Chemistry has voted to adopt this abbreviated name in place of arsenphenolamine hydrochloride now in New and Nonofficial Remedies.

CHLORAMINE-T. — Sodium Para-Toluenesulphochloramide.—$CH_3.C_6H_4.SO_2NaNCl+3H_2O$, 1:4.

Actions, Uses, Dosage, Physical and Chemical Properties.—The same as those of chlorazene (see New and Nonofficial Remedies, 1917, p. 140).

Chloramine-T (Calco).—A brand of chloramine-T.

Manufactured by the Calco Chemical Company, Bound Brook, N. J. No U. S. patent or trademark.

NOVOCAINE. — $CH_3(C_6H_4.NH_2.COO).CH_2N(C_2H_5)_2.HCl$. —The monohydrochloride of para-aminobenzoyldiethyl-amino-ethanol.

Actions, Uses and Dosage.—See New and Nonofficial Remedies, 1917, p. 31.

Manufactured by Farbwerke-Hoechst Co., New York. U. S. patent No. 812,554 (Feb. 13, 1906; expires 1923). U. S. trademark No. 53,072.

Health and Recreation Clubs.—In the Albany public schools a campaign is going forward in the formation of health and recreation clubs among the pupils of the sixth, seventh and eighth grades of the entire school system for the improvement of their health and general well being, as well as to cultivate discipline and other good qualities and make better citizens of them. With the cooperation of the board of health and the entire school organization, including the director of health, Dr. Clinton P. McCord, a complete plan for the formation and conduct of these clubs has been worked out, and in the November number of the *Health Messenger*, the school bulletin, prepared and printed in the schools, this plan, including a form of constitution, a club manual, blanks for reporting, rules for the conduct of meetings, inspections, etc., are fully set forth. The organization of the clubs will be effected by the school nurses and teachers with the cooperation of the principals. At the end of the year, health and recreation club certificates will be awarded to those grades attaining certain standards in health habits and recreational activities. This will induce a wholesome rivalry between the boys and girls and between the different grades. This represents an effort in cooperation among the children and youth of the schools for the production of healthier, better citizens that is timely and is deserving of imitation in the schools throughout the country.

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SATURDAY, DECEMBER 22, 1917

PRACTICAL ECONOMY

Our JOURNAL in common with all other publications is now paying abnormally high prices for paper, supplies, labor and postage. In addition, letter postage has increased 50 per cent. To offset these extra expenses, it is necessary to economize wherever possible. Under the new postage rate the cost for sending the customary bills for Fellowship and subscriptions and later receipts would total over $4,000.00. One half of this can be saved if each Fellow and subscriber will remit without being individually notified by mail. It is believed that many will gladly do this. Under the circumstances, such notification will not be sent on the first of the year as heretofore. In lieu thereof, a remittance slip is inserted in this issue of THE JOURNAL. It is hoped that Fellows and subscribers will cooperate in this effort for economy and accept the remittance slip in place of the annual bill sent in previous years, remitting without further notification.

HOOKWORM INFECTION IN DEEP GOLD MINES IN CALIFORNIA

Hookworm disease, like other maladies associated with a microbiotic origin, can arise whenever the etiologic agent can gain entrance into the body by way of the mouth or respiratory passages, or through the skin after it has been cut or abraded. The larvae of the hookworm also can bore through the intact skin if infected dirt happens to come into contact with the body. When persons living in a hookworm infected region go without shoes, the larvae are enabled to gain entrance to the body through the feet. How persistent the danger may be is evident from the statement current that hookworm eggs will remain infectious for a year after they have been evacuated from the intestine. This may be the case when the eggs are exposed to the variable climatic conditions on the surface; but hookworm eggs appear to remain infectious for a period even longer than one year when they are deposited in mines, where temperature conditions remain fairly uniform year in and year out. The insidiousness of the parasite is further emphasized by the fact that it "extends its evil influence in a quiet, cumulative manner, and in different directions." As a sanitarian recently expressed it, a man cannot enjoy normal health while the worms are attached to the inside of his intestine and daily sucking his blood. It should be remembered that although a person with hookworms may not be seriously affected himself, there is always danger of his spreading the infection if he commits a nuisance in a place favorable to the development of the eggs.

The problems of the campaign against hookworm disease are rendered difficult by a variety of conditions in part formerly unanticipated, some of which have recently been discussed in THE JOURNAL.[1] Dr. J. G. Cumming, director of the Bureau of Communicable Disease, California State Board of Health, and Joseph H. White,[2] sanitary engineer, U. S. Bureau of Mines, in a report on the control of hookworm infection at the deep gold mines of the Mother Lode, California, furnish added indication of the as yet intangible character of the sources of infection, as they occur in mines. Hookworm infection has long been known to be prevalent among miners in many parts of the world. The importance of its eradication from certain mines is shown by the fact that of the gold miners working underground about 40 per cent. contract this insidious infection in some of the mining districts of California, where it appears almost to be endemic. Aside from the hygienic and humanitarian aspects, the economic loss due to absence from work on account of illness and to inefficiency that cannot be directly measured is a large one. Hookworm infection in mines is a form of industrial disease that must be combated by knowledge of both the industry and the disease. Hence the unusual complexity of the problem.

The ultimate source of infection with hookworm in the California gold mines is not known. The immediate source is, of course, in the discharges from the bowels of those infected. The factors contributory to the spread of hookworm infection operate only after the infectious eggs have been set at large by the careless disposition of human excrement. In mines the soil readily becomes polluted. A miner cannot do his work without getting dirt on his hands and clothing; therefore his safety lies in keeping the dirt of the mine as noninfectious as possible. With a mine once infected, the means whereby the miner becomes infected are obvious. An illustration of the subtle possibilities was furnished by the California investigators in their inspections of miners' shoes. As they

1. Problems in the Campaign Against the Hookworm, editorial, THE JOURNAL A. M. A., Nov. 10, 1917, p. 1611; Hookworm in the Mines of China, Nov. 17, 1917, p. 1701.

2. Cumming, J. G., and White, J. H.: Control of Hookworm Infection at the Deep Gold Mines of the Mother Lode, California, Bull. 139, Dept. of Interior, Bureau of Mines, 1917.

remark, hookworm larvae might easily work their way through a fairly good pair of shoes, but the infection would be light. When a mine is known to be infected, a miner should take unusual care to keep his shoes in good repair. At the change house of one infected mine, 107 pairs of miners' shoes were examined, and forty-three pairs, or 40 per cent., were found to be broken or worn so as to permit hookworm infection.

To meet the situation in the Mother Lode mines so as to stop future infection and minimize danger from existing infectious areas, Cumming and White recommend that every employee should be examined for hookworm infection; and every infected miner should be treated until cured. No applicant for work should be employed until he presents a "hookworm certificate" from the California State Board of Health stating that he is free from hookworm infection. All mine workmen should be reexamined about one year from the date of the issuance of the "hookworm certificate." In addition to these personal features the introduction and further extension of suitable sanitary conveniences in the form of toilet facilities is urged. Rats must be exterminated, and the drainage systems improved where necessary. Finally, it is urged by the Bureau of Mines that the miners should be instructed in the causes, nature and prevention of hookworm disease, so that they may know how it is spread, and intelligently subscribe to the remedial measures that are introduced.

THE STATISTICAL EVIDENCE OF CANCER INCREASE

There is no doubt that the number of deaths recorded as due to cancer has shown a marked increase in the last few decades in all cities and countries for which reliable statistics are available. A sharp difference of opinion exists, however, as to whether the reported mortality represents a real or an apparent increase in the disease itself. It is evident that improvements in diagnosis must account for a part of the reported increase, that deaths now recognized to be from certain forms of cancer were earlier not diagnosed as such, but were reported under deaths from "old age" or other ill defined or unknown causes. It is when statisticians attempt to determine the relative importance of this factor in swelling the list of cancer deaths that they encounter statistical difficulties, and split into two groups: those who hold that cancer mortality is increasing more or less rapidly throughout the whole civilized world, and those who hold that the increase is only apparent, not real. The latter group has received a powerful ally in Professor Willcox,[1] who discusses the alleged increase of cancer in a recent weighty monograph.

Willcox first points out that of the previous investigations of this question, two stand in a class by themselves: the study by King and Newsholme in 1893 of data mainly derived from the mortality records of Frankfort, Germany, and the more recent study (1915) by Hoffman of cancer throughout the world. It is significant of the difficulties attending such inquiries that these two studies reach diametrically opposite conclusions.

Willcox analyzes the essential data comprehensively and subtly. Perhaps the most generally interesting portion of his paper is the reexamination of the Frankfort figures, with its extension of the period covered from thirty years (1860-1889) to fifty-four years (1860-1913), and the inclusion of 9,000 deaths instead of 3,000. The Frankfort tables and diagrams show that during this period there has been no significant change in the small mortality from accessible cancer of men, and that there have been irregular changes followed by a remarkable uniformity in the mortality from accessible cancer of women. Almost all the increase occurred in the mortality from inaccessible cancer. Study of this important material therefore indicates in Willcox's opinion that the apparent cancer increase in Frankfort was probably due entirely to improved diagnosis.

Another conclusion reached is that probably not less than one tenth of the reported increase of cancer mortality is due to changes in the sex and age composition of the population. With reference to the different sex incidence he says:

> Cancer mortality is lower but increasing faster among men than among women. Both differences may be due to the fact that among men the organs chiefly attacked by cancer are inaccessible, while among women they are accessible. Hence the scope for improving the diagnosis of cancer among men was and is much wider.

Two important pieces of evidence drawn from American statistics also may be mentioned. The deaths ascribed to unknown or ill defined causes in the American registration states (of 1900) decreased between 1900 and 1915 to one tenth of the initial number. "If these deaths no longer ascribed to ill defined or unknown causes were distributed over the other causes in a random way, the transfer to cancer accounted for about one ninth of the increase in the reported mortality from that disease." This is certainly not an overstatement. Similarly the deaths ascribed to old age in the same American registration states decreased between 1900 and 1915 to a little more than two fifths of the initial figures; the death rate from this reported "cause" was lowered still more, to less than one third. There can be no doubt that a considerable proportion of the apparent cancer increase—Willcox puts it as at least one eighth—was due to transfer from the old age column to the cancer column.

Willcox points out also that the reported negro cancer mortality is lower than the white, but is increas-

1. Willcox, F. W.: On the Alleged Increase of Cancer, Quarterly Publications of the American Statistical Association, 1917, **15**, 701.

ing more rapidly, seeming to indicate here also the influence of the relative correctness of diagnosis. He also notes that the increase in reported appendicitis mortality in England and the United States is parallel with the increase in reported cancer mortality, and intimates that both may be due entirely, as they certainly are in large part, to the improvement of diagnosis. The whole argument leaves one in a frame of mind tentatively to accept Willcox's conclusions:

> The cumulative evidence that improvements in diagnosis and changes in age composition explain away more than half and perhaps all of the apparent increase in cancer mortality rebuts the presumption raised by the figures, and makes it probable, although far from certain, that cancer mortality is not increasing.

THE NATURE OF MUSCULAR CONTRACTION

The theories as to the nature of muscular contraction have undergone profound changes since the opening of the twentieth century. Only a few years ago the working mechanism was still freely compared with a steam engine in which the direct combustion of fuel leads to the liberation of energy in the form of heat and motion. This analogy between the muscle and a heat engine received its greatest setback in the demonstration that muscular contraction is still possible in the absence of oxygen, without which true combustion promptly fails. As a sequence came the views that somehow very unstable energy-yielding compounds are built up in the contractile tissue, and that these disintegrate somewhat like the reaction of an explosive so as to do work. The chemical processes involved were vaguely conceived to consist essentially in "the building up of elaborate, unstable and oxygen-charged molecules, by the processes of so-called 'anabolism,' into the mystical complexes of irritable protoplasm." From the latter, energy was supposed to be discharged when the proper stimulus set off the charge, so to speak.

It is obvious that there must be something in a resting muscle which possesses some sort of potential energy; for when a muscle contracts, tension is developed and external work is done if the tension is made use of in processes requiring expenditure of energy. The energy of tension may also be allowed to appear in the form of heat. The nature of the processes involved have been greatly elucidated in recent years by the work of the Cambridge school of physiologists in England, notably Fletcher, Hopkins and Hill.[1] Today we know that the actual contractile process is not associated directly with the giving off of carbon dioxid or with the consumption of oxygen. Lactic acid is formed; but the chemical change up to this stage is not an oxidative process. What oxygen does is to remove by oxidation or otherwise the lactic acid produced by contraction. Precisely how this happens is as yet a mystery, made more obscure by the fact that outside the muscle, in the circulation, for instance, lactic acid is not directly oxidizable at physiologic temperatures. Nevertheless the dissipation of the lactic acid that is an accompaniment of the contractile process is highly important, however it may be accomplished; for lactic acid is the most obvious determining cause of the signs of fatigue; and recovery from fatigue depends in no small measure on the removal of this acid compound. Somehow, with the destruction or removal of the lactic acid, the energy of the muscular system is restored.

From this standpoint there are two chemical events involved in muscle incident to its function. The act of contraction itself is now known to be an anaerobic process independent of oxygen, but accompanied by the formation of lactic acid. In the second stage of functioning, whereby the lactic acid is removed again, oxygen plays a prominent part. We may quote Fletcher and Hopkins' formulation of these phenomena. The special processes, they state, which, when they occur within a muscle fiber, culminate in a contraction, make no call on an oxygen supply; they proceed anaerobically. The oxidations which are always associated with muscular activity are separated in time from that moment in which mechanical energy is liberated. They occur immediately afterward, and are concerned not with the introduction of the mechanical act, but with a restoration to the status quo ante. They are concerned not with stimulation but with recuperation.

Is the production of lactic acid to be regarded, then, as an undesirable incident and the substance itself as a toxic product, destined to be eliminated or destroyed as speedily as possible? Certainly not in the light of the newer conceptions, in which the acid serves as an essential agent in the machinery of contraction itself. To quote the Croonian lecturers again, the development of acid, with free hydrogen ions, in the neighborhood of colloidal fibrils gives the condition for contraction, either by increasing the molecular tension along longitudinal surfaces or by the process of imbibition, causing a resultant increase of tension in the fiber. The removal of lactic acid under the influence of oxygen will give relaxation, as the original state of tension in the fibril is restored.

The Cambridge investigators conclude that in the muscle, which, after all, forms the chief seat of metabolism, the acid intermediary product appears at such a stage and place as to have more than a purely chemical significance. It marks, on the one hand, an obligatory stage in a particular set of successive chemical reactions; but, on the other hand, it has here its special rôle to play in connection with the muscle machinery. In the evolution of muscle it would appear that advantage, so to speak, has been taken of this acid phase in

1. An account of some of this development is given by Fletcher, W. M., and Hopkins, F. G.: The Respiratory Process in Muscle and the Nature of Muscular Motion, Croonian Lecture, Proc. Roy. Soc., B, 1917, **89**, 444.

carbohydrate degradation, and that by appropriate arrangement of the cell elements the lactic acid, before it leaves the tissue in its final combustion, is assigned the particular position in which it can induce those tension changes on which all the wonders of animal movement depend.

Such conceptions carry us far away from the earlier views as to the mechanism of muscular contraction. We can no longer look on the muscle as a simple human heat engine. We are dealing in muscular work with something of a physical as well as a chemical nature. The potential energy must be in the form of surface energy or osmotic energy or both; in any event it is not directly associated with an oxidative chemical reaction of the familiar sort. In the words of Fletcher and Hopkins:

> With an understanding that the relatively permanent physicochemical system of the muscle can, without itself undergoing chemical modification, carry changes of potential as a result of changes in its physical configuration, it becomes easier for us to realize that the foodstuffs, or at least that sugar, may be the direct source of the contractile energy. Placed in the right locality within the muscle, sugar, by a nonoxidative yield of acid at the right moment, and by a subsequent oxidation of this at another right moment, can yield its total energy in a manner exactly suited to serve the peculiar machinery in which, so to speak, it finds itself.

NEW EVIDENCE REGARDING THE FAT-SPLITTING FERMENT OF THE STOMACH

Where does the digestion of fats begin in the alimentary tract? Until only a few years ago the digestive cleavage of these foodstuffs was supposed to be a function of secretions poured into the gastro-intestinal canal somewhere beyond the stomach. An occasional investigation, it is true, had revealed the existence of small quantities of fatty acids in the contents of the latter organ after the ingestion of considerable fat; but it was not until the unexpected findings of Volhard published in 1900 regarding the existence of a fat-splitting enzyme in the stomach that the possibility of any significant gastric digestion of fats was taken seriously into consideration. A decade later von Fürth,[1] in reviewing the literature on the probable first phase of fat digestion, concluded that doubtless the stomach contains a lipolytic ferment, and that physiologically the cleavage of fats begins at this point; but he believed that the lipolytic power of pure gastric juice is distinctly less than was earlier assumed. Von Fürth attached no particular physiologic importance to possible lipolytic processes in the stomach.

The question here at issue became greatly complicated by the realization, now grown to a firm conviction, that after the taking of foods of various sorts — and particularly after a meal of fatty food — it is easy to have a reflux of duodenal contents into the stomach. Obviously the pancreatic and intestinal fat-splitting enzymes may thus gain entrance into this organ. Is this, then, the true explanation of the source of the reputed gastric lipase? The failure of the earlier workers to rule out the regurgitation of pancreatic juice from the intestine as a source of lipase in the stomach, coupled with the low values for gastric lipase reported for the gastric juice by those who have examined purer specimens of the secretion, has thrown doubt on the actual existence of such an enzyme as a product truly elaborated by the gastric membrane.

It would not be surprising to find in the stomach secretion traces of any familiar enzyme occurring in abundance elsewhere in the body. Enzymes that find their way into the blood stream are known to "escape" into the gastric juice. The circulating fluids of the body do, in fact, contain some lipase. But if we may judge by the new observations of Hull and Keeton[2] at the Northwestern University Medical School, Chicago, this will not explain the appearance of gastric lipase, which they find in pure gastric juice in a concentration five or six times that in the succus entericus and the blood serum. They searched for lipase in gastric juice collected so that no contamination with intestinal or pancreatic products was possible. In the course of the investigation it developed that gastric lipase is a very unstable substance, a fact which at length explains the failure of many who have searched for the enzyme to find it. The fasting and acid-free juice always contains an appreciable concentration of lipase; it is, however, sufficiently sensitive to alkali or acid to be destroyed by a fifteen minute exposure to hydrochloric acid of the concentration (0.2 per cent.) frequently found in the stomach contents. The enzyme may be recovered from the stomach showing low acid secretion by immediate neutralization of the juice, and from stomachs in high secretory activity, if the acid is reduced by the addition of protein.

The Chicago investigators come to the conclusion that lipase is a true gastric secretory product, rather than an accidental "contamination" of the stomach contents. The persistence of the lipase in the stomach, they maintain, certainly seems to be a function of the free acidity. An acidity of 0.2 per cent. of hydrochloric acid appears to be about the upper limit for the recognition of much lipase, but in clinical observation this free acidity is not soon reached in the normal stomach under the usual diet conditions with average amounts of protein present to hold the acid. It is highly probable, therefore, that before the acid can accumulate to the point at which it can more than saturate the proteins, the lipase enzyme will have an opportunity of doing appreciable work, as the ptyalin

1. Von Fürth, O.: Chemistry of Metabolism, translated by A. J. Smith, Philadelphia, 1916.

2. Hull, Mary, and Keeton, R. W.: The Existence of a Gastric Lipase, Jour. Biol. Chem., 1917, **32**, 127.

of the saliva certainly does and as administered trypsin must do also, according to the investigation of Long and Hull.[3] At any rate, the possible importance of gastric lipolytic activity in the sum total of alimentary digestive performances is once more deserving of respectful consideration.

Current Comment

WINTER POLIOMYELITIS

The relative rarity of winter outbreaks of poliomyelitis is one of the chief reasons why officers of the United States Public Health Service have recorded in detail an epidemic occurring in Elkins, W. Va., in 1916-1917.[4] The investigation in West Virginia has especial significance in showing the great importance of unrecognized cases and of carriers in the spread of the disease. The investigators were led to believe that types of nonparalytic poliomyelitis exist in which the symptoms are referred in the first instance to the digestive tract. These cases of digestive disturbance of slight severity are very likely an important source in the spread of poliomyelitis infection. The facts discovered in this outbreak are considered to emphasize the importance of human contact in spreading infection. No connection was found between general cleanliness, insect prevalence and similar factors, and the incidence of the disease. Indirect contact through adult passive carriers is considered as particularly important. As a measure of administrative control, the authors lay stress on the minimizing of general intermingling of adults and children, especially at times when poliomyelitis is prevalent.

THE FATE OF STRYCHNIN IN THE BODY

Strychnin has so long been employed in therapy, and has also been so conspicuous as a dangerous poison, that the question of its precise behavior in the organism has attained considerable prominence. Despite this, much of the essentially desirable information on the subject has been a mass of contradictions and confusion. This statement applies in particular to the fundamental questions as to how the alkaloid is excreted from the body and whether it experiences any alteration, deposition or destruction in its passage through the organism. From a medicolegal standpoint it has further been of decided interest to ascertain whether strychnin disappears in the course of postmortem changes attended with putrefaction; for on the answer to this hinges in no small degree the possibility of our identifying the poison in the body in which it has wrought its havoc. These problems have been subjected to renewed experimental study in the pharmacologic laboratory of the Cornell University Medical College, by Hatcher and Eggleston.[5] They found that total amounts of strychnin equal to several times a single fatal dose may be administered to experimental animals in fractional doses on each of several successive days without causing permanent injury. From this clearly established fact it must be assumed that the poison is promptly disposed of in some way. It may come as a surprise to many to learn that only a small percentage of repeated toxic doses of strychnin can be recovered from the urine. Whatever is found in this excretion makes its appearance very soon after the administration of the substance. None can be recovered a day after the cessation of the dosage. The poison, administered parenterally without lethal effects, cannot be found in the feces. These facts, evincing the failure to detect in the excreta the bulk of administered strychnin, thus point to its deposition or destruction in the body. The latter outcome seems most probable in view of the practical failure of Hatcher and Eggleston to recover the alkaloid from the tissues even after administration of very large amounts, provided death did not ensue too speedily. The often made statement that strychnin is not decomposed during putrefaction appears to be quite untenable. These findings, based on careful experimentation, are believed to clear up some of the confusion in the literature. They may not render the task of the toxicologic chemist easier in his search for evidence of strychnin in the body; but they throw light on the tolerance of the organism and its capacities for defense against harm.

CITRIC ACID IN THE URINE

The announcment has just been made by Amberg and McClure[1] that normal human urine contains citric acid. It is asserted that the amount excreted in the course of twenty-four hours is quite appreciable—"enough to play a modest rôle in the acid-base economy of the organism." One naturally thinks of food sources for the excreted product. Citric acid is found in such fruits as oranges and lemons, and it is stated to occur to the extent of from 0.05 to 0.1 per cent. in human and cow's milk. Feeding experiments with citrates make it less probable, however, that the citric acid in the urine should come from the material ingested, since the latter seems to be destroyed with considerable ease in the body. In view of the alleged constant occurrence of citric acid in another product, milk, that fraction now said to be present in the urine may likewise have an endogenous origin. The evidence furnished by the Chicago biochemists regarding the output of citric acid is indirect and therefore not absolutely convincing. Pending more rigorous proof, speculation as to its origin may therefore well be suspended.

3. Long, J. H., and Hull, M.: Jour. Am. Chem. Soc., 1917, **39**, 162.
4. Leake, J. P.; Bolten, Joseph, and Smith, H. F.: Winter Outbreak of Poliomyelitis, Pub. Health Rep., 1917, **32**, 1995.
5. Hatcher, R. A., and Eggleston, Cary: The Fate of Strychnin in the Body, Jour. Pharmacol. and Exper. Therap., 1917, **10**, 281.

1. Amberg, Samuel, and McClure, W. B.: The Occurrence of Citric Acid in Urine, Am. Jour. Physiol., 1917, **44**, 453.

War Cripples.—The attitude of the public toward the returned soldier will do much to make or mar the success of work with war cripples. The cripple returning from the front deserves the whole hearted gratitude and respect of the nation, but to spoil and pamper him is an ill-advised way of meeting the obligation.—McMurtrie, Columbia War Papers

Medical Mobilization and the War

RED CROSS GETS NOBEL PRIZE

The International Red Cross Committee of Geneva has been awarded the Nobel Peace Prize for 1917, and by unanimous consent of the custodians of the special fund, the prize of 1916, which was not bestowed last year, was added to this award.

WOUNDED IN ACTION

The War Department received advices, December 11, from General Pershing, that Lieut. Edgar W. Young, M. R C., McKinney, Va., a graduate of Baltimore Medical College, in 1911, had been seriously wounded in action.——Advices from France, December 16, state that Lieut. H. Cotter Boyle, M. R. C., of Luzerne, Pa., a graduate of Temple University, Philadelphia, in 1914, had been seriously wounded, December 7, while on duty with the British forces.

MEDICAL RESERVE OFFICERS AT WEST POINT

Major W. H. Haskin, M. R. C., U. S. Army, writes from West Point that the entire medical staff at the Military Academy are Medical Reserve Corps men. The personnel is as follows: Major W. H. Haskin, Lieuts. J. F. Grattan, J. D. Kelly, Sutherland Miller and Kenneth Phelps; Dental Corps, Lieutenants Bachman and C. Van de Water; veterinarian, Lieutenant Churchill.

MOVING PICTURES AND OTHER ILLUSTRATIONS FOR THE ARMY MEDICAL DEPARTMENT

The Surgeon-General has authorized the establishment at the Surgeon-General's Library and Army Medical Museum, Seventh and B Streets, S.W., Washington, D. C., of a repository for moving pictures, slides and photographs of camp and other activities related to the work of the Medical Department. These illustrations are to be made available for instruction purposes in camps, cantonments, etc., and will be lent for use in conjunction with lectures and other courses of study in medical schools, training camps and cantonments. Donations of such illustrations are solicited.

MILITARY ROENTGENOLOGY CLASS ORGANIZES

The class in military roentgenology in the course conducted by Capt. E. S. Blaine at the Cook County Hospital, Chicago, has arranged for a permanent organization. The class is composed of thirty physicians from fourteen different states: Iowa, Indiana, Tennessee, Florida, Wisconsin, Texas, New York, Illinois, Alabama, Minnesota, Ohio, Nebraska, Kentucky and Michigan. The work is not limited to military roentgenology, but each member is required to do radiography, fluoroscopy, therapy, developing and diagnosis. In the permanent organization Lieut. Thomas D. Cantrell of Bloomington, Ill., was chosen president, and Capt. D. W. Young of Paris, Ill., secretary.

VOLUNTEER SERVICE IN SOME BRANCHES FOR MEN REGISTERED UNDER SELECTIVE SERVICE

Under date of December 17 the Provost Marshal issued to the governors of the various states an announcement that men of draft age may still volunteer for certain branches of the service. White men only will be accepted and they may enlist only in the Infantry, Signal Corps, Medical Corps and Quartermaster's Department. All men enlisted for the Medical Department will be sent to the Medical Officers' Training Camp at Fort Riley by local boards west of the Mississippi, and to the Medical Officers' Training Camp at Fort Oglethorpe, Ga., by boards east of the Mississippi. Transportation and subsistence expenses to the camps are to be furnished volunteers by the local boards.

PAMPHLETS ON VENEREAL DISEASES

The Illinois Vigilance Association has prepared for distribution several pamphlets on venereal diseases which it offers to send free of charge, transportation prepaid, to any Army officer or medical officer who will ask for them and use them carefully among the soldiers. It also offers to send single copies free of charge to any physician on receipt of a self-addressed, stamped envelop. The pamphlets consist of one entitled "For Our Daughters" by Dr. Charles Burlureaux of the French Society of Sanitary and Moral Prophylaxis; one entitled "For Our Sons" by Professor Alfred Fournier; three Great Army Records by Wirt W. Hallam, and a pamphlet containing Lord Kitchener's "Instructions to Soldiers" and an article by Prof. William T. Belfield. The address of the Illinois Vigilance Association is 58 West Washington Street, Chicago.

WAR REVENUE LAWS AND THE DISPENSING OF ALCOHOL BY PHYSICIANS

Under the War Revenue Act of Oct. 3, 1917, which went into effect, Dec. 1, 1917, hospitals, sanatoriums and physicians who use alcohol for nonbeverage purposes are required to file a bond and obtain a permit from the revenue authorities. This law is being administered in connection with the Food Control Act of Aug. 10, 1917, and applies to every one handling alcohol. Heavy penalties are provided for noncompliance with or violation of the law. Physicians should make themselves conversant with the requirements if they have not already complied with the law. Druggists may not sell to physicians, hospitals or sanatoriums nonmedicated alcohol unless the physician, hospital or sanatorium has filed the required bond and obtained a permit. Druggists may, however, sell alcohol to physicians or the general public in any quantity up to 1 pint provided it is rendered nondrinkable by a prescribed proportion of the following substances: phenol, formaldehyd, mercuric chlorid, hydrochloric acid, tannic acid, alum, lysol or liquor cresolis compositus. A druggist having a permit may fill a physician's prescription or a physician with a permit may dispense prescriptions containing alcohol provided the prescription contains other drugs sufficient to render the alcohol unfit for beverage purposes. To be able to purchase nonbeverage alcohol physicians, hospitals and sanatoriums must, in addition to having filed the bond and obtained the permit, order such alcohol on a form prescribed by the law. The penal sum of the bond must equal $3 for each proof (50 per cent.) gallon of alcohol expected to be on hand or in transit at any one time. The bond must be that of a surety company, or a personal bond signed by two sureties approved by the collector of internal revenue, or may be a personal bond secured by a deposit of liberty or other government bonds. More complete information may be obtained from the district revenue officers.

SUMMARY OF HEALTH CONDITIONS IN CAMPS OF UNITED STATES FOR WEEK ENDING DEC. 14, 1917

National Guard

With the exception of the Thirty-Fourth (Camp Cody), Thirty-Fifth (Camp Doniphan) and Fortieth (Camp Kearny) divisions, but few new cases of measles are reported from National Guard camps. In each of the divisions mentioned, with the exception of the Fortieth, the number of new cases is small as compared with the number reported for last week. In the Fortieth Division the number of new cases is 330 as compared with 279 for the previous week.

Pneumonia following measles is also rapidly decreasing in amount in all but three of the divisions in which measles has been epidemic. In the three divisions referred to, Thirtieth (Camp Sevier), Thirty-Fourth (Camp Cody), and Thirty-Ninth (Camp Beauregard), an increase in the number of cases is noted, although the total number of new cases reported in each division is not high.

For meningitis the number of new cases has increased in but two camps of the National Guard. The Thirty-Fifth (Camp Doniphan) Division reports six new cases as compared with two for the previous week and the Thirtieth (Camp Sevier) Division reports six as compared with one for the previous week. The number of new cases reported in the Thirty-Sixth (Camp Bowie) Division has decidedly decreased. The highest number of new cases reported in any other division of the National Guard is three.

National Army

In the National Army a marked increase has occurred in the number of new cases of measles in the Eighty-Seventh (Camp Pike) and Ninetieth (Camp Travis) divisions, and a slight increase in the Eighty-Ninth (Camp Funston) Division. In all other divisions the number of new cases of measles reported is insignificant.

Pneumonia conditions in all divisions of the National Army have decidedly improved during the week, except in the Ninetieth (Camp Travis) Division, in which an increase of thirty-six new cases is reported over the report of last week.

As regards meningitis, the Eighty-First (Camp Jackson) Division reports a marked increase in the number of new cases over the report of last week. The outbreak of this disease in the Eighty-Ninth (Camp Funston) Division continues to decline, but eight new cases having been reported during the week. The highest number of new cases reported in other divisions of the National Army is five. Seven divisions of the National Army reported new cases of this disease during the week.

NEWS OF THE BASE HOSPITALS

Base Hospital No. 22, Milwaukee, Wis., has been mobilized under the command of Col. Thomas Jellis Kirkpatrick, at the Light Horse Squadron Armory in Milwaukee. This unit is fully equipped, the equipment containing full hospital equipment for a 500 bed hospital, including 500 iron beds, 1,500 blankets and all accessories needed, a complete indoor telephone equipment, a complete supply of medicines, surgical dressings and surgical instruments, special eye, brain and jaw instruments, a $7,500 roentgen-ray apparatus, including 500 roentgen-ray plates, a giant magnet, complete dental outfit, three White ambulances completely equipped, one 3-ton White motor truck, one Hudson seven-passenger officers' car, one motorcycle, a fully equipped kitchen outfit, and a "Kinyoun" portable bed disinfector capable of sterilizing ten bed mattresses at one time.

Most of the professional staff have received training at medical schools and army camps. Major Curtis Evans, the director of the base hospital, has been for the last three months at the neurologic school at Philadelphia taking the course in brain surgery. Captain Beffel and Lieutenant Lillie were there with him. Major Otho Fiedler has taken the Carrel course in New York and is now at the Rockefeller Institute taking a laboratory course. Captain Gilchrist is at Fort Travis with the base hospital there. Lieutenants Eagan, Rueth and Fitzgerald are at Fort Riley. Lieutenant Foerster is taking a course in New York City. Lieutenants Senn and Brook are at Waco, Texas.

In the absence of Director Evans, Major Robert Curtis Brown has been acting director. Capt. Oscar Lademan has been doing special work in examination of heart and lungs at Fort Oglethorpe. Lieutenants Campbell and Siewart have been taking special courses in dental surgery. Major Ruhland, Captains Ivy and Harry Gradle will continue in their present service.

The following is the personnel of the hospital: Majors Curtis A. Evans, director, chief surgeon; Robert Curtis Brown, chief of medical service; Otho Fiedler, staff surgeon; Capts. Henry B. Hitz, staff surgeon, ear, nose and throat; John W. Means, oral surgeon; Herbert Walker, ophthalmology; Philip F. Rogers, staff surgeon; Eugene A. Smith, staff surgeon, roentgenologist; John M. Beffel, Francis A. Thompson and Oscar E. Lademan, staff physicians; Lindsey Denniston, quartermaster; Lieuts. Ralph T. Gilchrist, chief of laboratory; Allen Sivyer, assistant in laboratory; Orville R. Lillie, Francis B. McMahon, Ulrich Senn, William J. Egan and Edward Rueth, staff surgeons; Harry Robert Foerster, Delparde W. Roberts, Jeffry J. Brook and George M. Fitzgerald, staff physicians; Stephen Campbell and George B. Siewart, dentists; Paul B. Jenkins, chaplain, and H. I. Rice, first sergeant.

The University of Minnesota Unit, Base Hospital No. 26, is mobilizing on the university campus under orders from the War Department, and will soon be ready to entrain for Fort McPherson, Ga., when the date for departure is definitely settled. Advance notice had been received asking the unit to be ready for mobilization, and the order to mobilize found the hospital fully equipped and prepared with the quarters for the men ready when they were told to report. This unit is a combination of the University of Minnesota and the Mayo Clinic. The commissioned officers include Majors Arthur A. Law, director and chief surgeon of the university, and S. Marx White, chief of medicine; Capts. E. C. Moore, Los Angeles; Robert D. Mussey, Carl Fisher, opthalmology and otolaryngology of the Mayo Clinic, and John Bentler, quartermaster; Charles A. Reed, orthopedics, Angus Morrison, neurologist; Gilbert J. Thomas, urologist; Harry B. Zimmerman and John Staley of the university; Lieuts. Alexander B. Moore, roentgenologist; W. W. Bissell, chief of laboratory; David M. Berkman, James M. Hayes, Fred Rankin and Thaddeus L. Sclapka of the Mayo Clinic, and Moses Barron, Archibald Beard, O. M. Klingen, Thomas Snodgrass, Gordon M. Clark and Taylor B. Smith of the university.

NEWS OF THE TRAINING CAMPS

Fort Riley

The event of the past week was the visit to the camp last Saturday of Surgeon-General Gorgas. He was accompanied by Col. D. C. Howard, M. C., U. S. Army; Major Victor C. Vaughan, M. R. C., and Prof. William Welch of Johns Hopkins University Medical School. The morning was spent in Camp Funston, inspecting the camp with special reference to contagious diseases and the inauguration of methods for their prevention. Particular attention was given to meningitis and pneumonia. The afternoon was devoted to the medical officers training camp. At 3:30 all the officers, instructors and students met in the Y. M. C. A. auditorium. General Gorgas was introduced by Colonel Bispham, and spoke to the officers on the work of the Medical Corps. Short talks were also made by Major Vaughan and Professor Welch.

An isolation camp has been established between Fort Riley and Camp Funston, with about 1,600 men. A new isolation camp on the western edge of the reservation is now being built with a capacity of 2,500. To this camp are sent all newly arrived men and all old men coming back on leave. The work being done here is evidently recognized, as the Surgeon-General has just asked for three men from the contagious disease squad to be sent to Camp Doniphan for meningitis field work.

Winter has descended on the camp with a rush. After long weeks of unbroken Indian summer, we had come to believe that the much dreaded Kansas winter was a myth and that a heavy overcoat was an unnecessary luxury. But the last week has undeceived the most skeptical. Thursday was gloomy, with a strong wind gradually working around into the North. Friday brought a few snowflakes and a temperature of about 10 degrees above zero. Saturday night was 5 degrees below. Since then, the temperature has depended on the brand of the thermometer and the imagination of the observer. Fifteen degrees below zero was reported one night, but this has not been officially confirmed. For the past six days the mercury has hovered near zero most of the time; but the work of the camp has gone on without interruption. Drills, horseback riding and maneuvers have been held the same as usual. Little personal inconvenience has been experienced. The company barracks had all been lined and boarded up in anticipation of cold weather, while the officers' quarters had been weather-proofed largely according to the judgment or ingenuity of the occupants. Stoves and an abundance of coal kept barracks, quarters or mess halls comfortable. Sheepskin coats, knit helmets, fur caps and heavy gloves have suddenly become popular. In spite of zero weather, windows are opened wide at night, the officer of the day inspecting all barracks at regular intervals each night to insure adequate ventilation. The health of the camp has been excellent, only two or three being on the sick list out of nearly 550 officers. In spite of the cold weather, the largest number of officers on the sick report any one day was three, on two days there was one each and on one day two, making a total of fifteen cases for seven days, or an average of two per day, 0.36 per cent., or 3.6 per thousand. Evidently, the medical officers' training camp would be an extremely poor place for any man to start in the practice of medicine.

The first instalments of student officers for the third training camp are now coming in, about 150 having arrived during the past week. Cold weather has made all trains late, so that some of the men reached camp after dark or even late at night. Company 14 has been filled and Company 15 started. These new companies are in the barracks formerly occupied by Companies 1 and 2. The regular schedule for Company 14 started Monday. Company 15 will begin its class work next Monday. The contrast between civilian life in steam-heated houses and office buildings and camp life in barracks is much greater to the men reporting for duty now than to those who began their work in the summer. But the new men are settling down to their work in dead earnest.

White collars are soon replaced by flannel shirts, and caps by field hats. While the cold weather has made drilling and hiking heroic experiences for men fresh from civilian life, there is no shirking. The new officers are taking hold with determination. Of course, the usual jokes are being attempted. Several newly arrived officers have visited the quartermaster, earnestly asking where they can secure the "O. D. Regulation Officer's Umbrella." Some have reported to the adjutant's office and asked for "butter checks," while a number have made careful search all over camp for "Colonel Latrine's headquarters" so that they might report for fatigue duty as directed. But these stereotyped camp jokes are accepted good naturedly as a part of the game, and in a few weeks the new "Docs" have ceased to be rookies, and are ready to help take in those who have come in since their own arrival.

THE FUNCTION OF ORTHOPEDIC SURGERY IN THE WAR

The Philadelphia County Medical Society in its meeting of Nov. 28, 1917, heard several papers descriptive of the work of the orthopedic section of the Surgeon-General's Office and the plans for reconstruction after the war. Major David Silver, Pittsburgh, vice chairman, orthopedic section, Surgeon-General's Office, states that in organization of the work of orthopedic surgery the Surgeon-General has been guided very largely by the experience of the English army and has, in addition, paid special reference to: (1) the securing of a sufficient personnel; (2) provision for an ample number of beds, and (3) the reception of the wounded soldier as early as possible in the division to which he belongs and with the least possible change of dressing. There are now about eighty-five men in training in Europe, sixty men assigned to camps in this country, and eighty or more placed in courses of instruction, with a considerable number still unassigned. Especial attention has been paid to the training of men who did not have a sufficient fundamental knowledge of orthopedic surgery. For these men the plan of instruction consists of intensive courses of six weeks' duration, work in the cantonment hospitals under qualified orthopedic surgeons, and later, work abroad as assistants to qualified men.

Efforts are also being made to instruct the medical men generally, the line officers, and the enlisted men themselves in the care of the feet, the handling of minor joint injuries, and the simpler injuries of the back.

In the plan for the organization of the work in France, the Surgeon-General has arranged for the establishment of an orthopedic section in each hospital, and this will be placed beside the fracture section in order that the same brace shop and curative workshops may be used for the two. From 5 to 7.5 per cent. of the wounded are expected to be returned to this country, and these will be placed in the general reconstruction hospitals that are being planned in the various sections of the country. Here the reeducational work will be carried out.

The Surgeon-General has established a laboratory for the study of the various problems connected with artificial limbs. There will not be much difficulty in the supplying of artificial legs to the soldiers, as this has reached a high degree of perfection in the hands of the American manufacturer. The substitute arm is naturally, however, not so satisfactory on account of the complicated demands that are made on it when we attempt to supply the functions performed by the normal hand. So far it has been found more satisfactory to use some form of mechanical hook for labor, reserving the hand for social use.

Orthopedic surgery is concerned also with the industrial problem, which is as important as that of the military. The comparison of statistics clearly demonstrates the great importance of applying the same plan that has proved so valuable in military work to industrial work as well. In war we may have a great many casualties in one day, while in industry the number of daily accidents is small; this loss, however, is continuous, so that the economic loss of industrial accidents in the long run assumes an equal importance to the casualties in war. In view of the probable industrial struggle that will follow immediately after the conclusion of the present war, it is of vital importance that the reeducational plan be so made as to embrace both the military and the industrial need.

The Civic Aspects of Orthopedic Surgery in the War

Major Henry R. Hayes analyzed the problem of reconstruction. While this might not seem to be a large problem, analysis reveals its extent. A man returned disabled for service will probably need, in addition to the surgical treatment overseas, further surgical and curative treatment at home. His medical and mental limitations with relation to the character of his previous occupation in civil life must be carefully studied by the medical and vocational staff to determine the specific training he shall have. Surgeons and physicians must tell us what men with given disabilities cannot do. Experts in vocational training must advise what trades to teach the disabled. Employers and employees must advise us on the local trade and labor markets. There must be fundamental organization, that employers and employees may not be asked to take unreasonable risks; and there must not be discrimination against the crippled. A man reconstructed and reeducated must be presented to society, equipped to earn the pay of a given job.

Exemptions under the National Army draft law for physical disabilities have been astonishingly large, and not a small number of such disabilities are orthopedic in character. This situation is being studied by one department of the government, that such disabilities in the younger and future generations may be minimized. Reconstruction work, therefore, will require the close cooperation of Army federal bureaus, and state and local official and civilian organizations.

Dr. G. G. Davis, member of the Orthopedic Advisory Council, thought it strange that a great war should have been necessary to arouse the people to a sense of their responsibility. We speak, for instance, of the military reconstruction, the importance of the reconstruction in industrial enterprises; but the purely civil cripple is not yet receiving a fair chance. All through our community there is a class of cripples that cannot receive treatment because of the lack of provision. This problem has occupied the attention of the orthopedic profession but it seems to have required the war to make the people appreciate its importance.

Dr. A. Bruce Gill believed that it would be difficult to find experts in teaching trades to cripples, since the work is in its very beginning. No evil is unmixed, and the opportunity for the cripple from this time will be such as it never was before. Only four states in the Union have given any state attention to this work. There will be required cooperation and study to equip and find industrial positions for the cripples that will be returned to us after the war.

Dr. Charles K. Mills noted that the War Department is sending to Philadelphia military men who are receiving special training in certain courses of instruction; but these different classes have not been coordinated. There are a neuropsychiatric class, a neurologic surgical, and an orthopedic group. The relations of orthopedic surgery to neurology are most important. That which should most concern us in the treatment of cripples is the diagnostic study. The first consideration should be a knowledge of the various conditions of the nervous muscular system, bones and joints responsible for such cases. While the greatest possible attention should be paid to the training of men for orthopedic work, their studies should be devoted to a very considerable degree to neural medicine. There are cases in this war which bring back the statements of Sir Benjamin Brodies and of Sir James Paget that functional hysteria was due not to organic injury of nerve, muscle, bone or tendon, but to certain special conditions of the nervous system. Every orthopedic base hospital or reconstruction hospital should have, and doubtless will have, a neurologic member on its staff. One of the great hospitals with which Dr. Davis is connected is the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. This combination of work was brought about by the great neurologist, S. Weir Mitchell, and Dr. Thomas G. Morton, surgeon, and the institution has obtained results that would have been impossible had there not been this coordination of neurology and surgery.

Major Silver, in closing, said that one distinction most important to make is that orthopedic and reconstruction are not synonymous terms. The point emphasized by Dr. Davis of the urgent need of carrying out orthopedic work in our general hospitals is one of the most important points in our industrial problems. Men discharged from the hospital failing to follow directions, or given no directions, acquire atrophy from disuse of an injured member. We must supply the missing link so that men are physically restored before they are allowed to leave the hospital. The question of the experts mentioned by Dr. Gill presents a difficult problem; yet, any one who has seen what is done by these men with amputated limbs will not ask for more finished experts than they are. One man with one arm amputated is a dentist. In reeducating these crippled soldiers, we shall be the ones who are reeducated.

NEWS OF THE CANTONMENTS

Twenty-Eighth Division, Camp Hancock, Augusta, Ga.

DEC. 9, 1917.

Friday, December 7, Major Stiles, the hookworm expert, of the United States Public Health Service, addressed the surgeons of the Twenty-Eighth Division on the subject of diseases of the southern negro, and care of troops in the South.

During the past week the Inspector-General of the Army has been making a close inspection of the division.

Thirty-First Division, Camp Wheeler, Macon, Ga.

DEC. 12, 1917.

The two epidemics of measles and pneumonia appear to have come to an end. While it was suspected that there was some connection between the two, it was not known that the connection was so intimate until the figures were tabulated. It was then seen that the curve for pneumonia rose following the rise for measles, reached an apex twelve days after the measles apex, and fell in the same manner. The collected figures showed that approximately 45 per cent. of the pneumonia followed measles. Of some 3,000 cases of measles approximately 7 per cent. were followed by pneumonia. Moreover the measles pneumonia was very much more fatal than the independent pneumonia. There is no longer any doubt in our minds that pneumonia is an infectious disease, or that preventive measures must be used very much as for meningitis. All factors which weaken men and lower the vitality are powerful predisposing causes. Of these measles is the chief; it prepares the bronchii for receiving the germs, spreads the pneumococcus through bronchial cough, and in some peculiar manner renders the patient especially susceptible. It may be said to produce a sort of anaphylaxis for pneumonia.

PERSONAL

Major Harrold of the One Hundred and Twenty-First Infantry is out of the hospital after a severe operation. He left Thursday for a short trip to Washington.

BASE HOSPITAL

Major Cole, chief of surgical service at the base hospital, is using the Carrel method of wound treatment, with good results. He finds the Dakin solution rather difficult to prepare and preserve. Freezing makes it worthless. The treatment was demonstrated to all medical officers on Thursday. Major Sailer, chief of medical service, addressed the medical officers on the old but ever new subject, pneumonia, on Friday.

Room for better handling of patients has been made by the transfer of 123 pneumonia convalescents to Fort McPherson.

Mumps are on the increase judging from the admissions during the week.

Major Hans Zinsser gave a most interesting and instructive lecture on the serum treatment and diagnosis of the various types of pneumonia on Monday night. He is now actively engaged in locating and isolating meningococcus carriers of whom a few have been found in the division.

ONE HUNDRED AND SIXTH SANITARY TRAIN

Major Lorin A. Greene, commanding Field Hospital No. 121, has returned from his leave of absence and has taken up his duties with renewed vigor.

Lieutenant Stearns of Ambulance Company No. 122 has been transferred to the base hospital at this station for permanent duty.

The many friends of Lieut. Peter S. Mallon are pleased to hear that he is recovering from his serious illness at the base hospital at Fort McPherson.

The "big house" started last week by Majors Keenan and Patterson has been completed and occupied. The train commander and the director of field hospitals certainly seem comfortable in their three-room bungalow.

Recruiting has been brisk the past week and the Field Hospital No. 124 has practically completed its quota through the activity of Captain Miles.

Lieutenant Meriwether of Field Hospital No. 122 is on a short leave of absence.

Thirty-Fourth Division, Camp Cody, Deming, N. M.

BASE HOSPITAL

DEC. 12, 1917.

Associated with each division in mobilization camps is a base hospital, which, while not a part of the division, necessarily works in the closest cooperation with it, both in the care of the sick and injured and in the training of the personnel of the medical department. These hospitals are large, for they serve a population as great as that in our smaller cities. At Camp Cody, the base hospital has already a considerable history. This camp is not entirely new, but is over a year old, having come into being at the time of the trouble with Mexico, which led to the establishment of military camps at this and other places along the border. Ground within the town of Deming adjacent to the site of the camp was acquired by the Deming chamber of commerce and leased to the government for ninety-nine years at a nominal rate. Sewerage and water connections were given by the town council, and seven wooden buildings were erected, one for administration and six for use as medical and surgical wards. These were completed about August 1, and used for the hospital purposes under the direction of Major Truby, M. C., U. S. Army, first commanding officer of the base hospital.

Medical officers assumed command of the base hospital as follows: August 1, 1916, Major Truby; shortly afterward, Major F. W. Weed; December 1, Major M. H. DeLaney; April 17, 1917, Major H. C. Pillsbury; April 25, Lieut. (now Capt.) R. B. McLaws, and, Sept. 1, Major A. O. Davis, who is still in command.

With the advent of the Thirty-Fourth Division, the accommodations at the old base hospital became utterly inadequate, and the preparation of the new hospital was made part of the construction program. The site is 4 miles away from the noise and dust of the town, located in the full desert and affording an uninterrupted view of the mountains, which surround the Deming plain on all sides. Work was so far completed that, Nov. 1, 1917, all except the surgical patients were moved to commodious buildings ready for them. There are forty-three of these, built on the cottage plan, spread over a large area, but connected with one another by wide covered ways. These, and the spacious verandas surrounding the cottages, provide abundant opportunity for moving the sick and convalescent outdoors into the sunshine.

Twenty-two wards are occupied as follows: 1, measles and its complications; 2, 3, 6, 7, 8, 9, 10, 11, 13, 14, 15 and 16, medical wards; 4 and 5, genito-urinary wards; 12, pneumonias; 17 and 18, nose and throat cases; 19 and 20, orthopedic cases, and 21 and 22 (isolated) contagious diseases. Each ward accommodates forty patients, and there are in the hospital (December 6) 1,284 patients in the new hospital and 190 in the old. These include cases as follows; measles, 45; German measles, 192; pneumonia, 27; diphtheria, 3; scarlet fever, 8; venereal diseases, 16; tonsillitis, two wards; gastro-intestinal, one ward; awaiting possible discharge on surgeon's certificate of disability, 250. Thirty-three medical officers are in attendance and 311 enlisted man. Medical Department, including forty-five temporarily detached from the sanitary train. Major A. O. Davis, commanding officer, comes from Brighton, Maine; Major John W. Sluss of Indianapolis is adjutant; Major William H. Thomas of Philadelphia is chief of the surgical service, and Major Edward B. Bigelow of Worcester, Mass., of the medical service.

NOTES

French and British officers attached to the division are giving to the medical officers several talks on conditions on the west front. They are instructive and valuable, and are greatly appreciated.

Two divisional reviews have been held recently. Favorable comment was made on the character and conduct of the sanitary train.

The Thirty-Fourth led all the divisions in subscriptions to the Liberty Loan, having subscribed for a larger total and per capita amount than any other.

Over $7,000,000 in war insurance has been subscribed within the division thus far.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

DEC. 15, 1917.

Owing to the impassable roads following the deep snow, it was impossible for the garbage contractors to use their trucks for the collection of garbage, and it was found necessary by Dr. Luther R. Poust, sanitary officer, to operate the camp incinerator for garbage disposal. The various units were ordered to utilize their own wagons in hauling the garbage from their respective kitchens to the kitchens' garbage depot.

Freezing water pipes in bath houses have been one of the inconveniences suffered by the men at a few of the barracks. Active outdoor training has been retarded by the cold spell,

and indoor lectures and classes have taken the place of drilling.

False reports of sufferings of soldiers at the cantonment and even stories of deaths from freezing have been circulated and branded as German propaganda. On the tenth instant, the second death from cerebrospinal meningitis occurred since the opening of the camp. Only a few days before he was taken sick, he took out a $10,000 War Risk Insurance Policy in favor of his mother. She will be the first beneficiary to receive payment on an insurance policy taken out at this post. There are twelve other meningitis patients at the camp, but all are expected to recover under the serum treatment. All company commanders have been authorized to waive Army regulations in cases of men honorably discharged from the service and without means to provide themselves with heavy outer clothing, letting them have overcoats to wear home. Overcoats issued are to be returned to the nearest Quartermaster's Depot within fifteen days after discharge.

The base hospital suffered considerable inconvenience by the freezing of water pipes leading to the operating room, putting out of commission all sterilizers. The commanding officers took personal charge of a group of men detailed to thaw out the pipes, and in a few hours the operating room was ready for an operation. Fortunately, during the period that it was out of commission not an emergency arose that required its use. Many oil stoves were requisitioned to heat wards after the steam was found inadequate.

BASE HOSPITAL

Special orders issued on the 13th, from Washington, D. C., direct Lieut.-Col. Will L. Pyle of the Medical Corps to report to the commanding general of the Eighty-Fourth Division, Camp Zachary Taylor, in person and assume charge of the base hospital. Colonel Pyle has been on duty at Fort Niagara, N. Y. He has not arrived as yet, and will relieve Major J. W. Worthington, who is the senior officer in charge of the base hospital, and who has been ordered elsewhere.

On the 13th, 906 cases were under treatment in base and regimental hospitals, against 967 earlier in the week. There are 23 cases of typhoid fever, 17 cases of pneumonia, 315 of measles, 7 of mumps, 5 meningitis carriers, 13 meningitis and 11 erysipelas. On the 14th, 63 patients were discharged.

Lieuts. S. H. Geist and Mayer are two of the busiest officers at the camp each morning up to 10 o'clock, as they are in the hospital receiving ward. An average of forty patients arrive at the hospital each morning, where they are examined and admission history taken before they are assigned to the wards.

"Walker," the ambulance dog, has been reported "absent without leave." The ambulance company has adopted another dog they named "Sergeant" so they may be able to throw food at him when displeased with the mess.

A company of the Three Hundred and Thirty-Fifth Infantry was due to be released from quarantine for meals when a private who had been exposed for seven weeks developed the disease, and all will have to remain in the confines of their area for fourteen days longer, thus destroying their chances for a furlough for Christmas. The patient is being accused of being the slowest mortal alive.

Eighty-Fifth Division, Camp Custer, Battle Creek, Mich.

DEC. 11, 1917.

Although winter weather has come down on us with its fury, the men seem to enjoy it. Training necessarily has been interfered with, yet hikes, drills and school work goes on much the same as if there were not 8 or 9 inches of snow on the ground.

Whether the cold weather will have any effect on the health of the camp remains to be seen; but reports given out by the division surgeon show the rate to be less than that of the general rate of the National Army, with only 14.79 per thousand. Thirty-two per thousand is the rate of the entire National Army.

The good work of the state health department, the city officials and the military police is without question responsible for the rather unusual percentage rate of venereal infections here. Camp Custer's record is only 1.75 per cent. As this includes all types, including those that were brought to camp with the draft increments, the showing is particularly gratifying to the division surgeon.

It has been shown that thirty-five female carriers of venereal infection were isolated and confined in hospitals at Ann Arbor. There has been no provision made for male carriers. It is expected that arrangements will be made by the state board of health for obtaining a building for segregation of civilian carriers.

The plan of instruction given the medical officers has been started again in paper work, gas defense work and map reading. The lyceum under the direction of Major Wood, commanding officer at the base hospital, has also begun, and much interest has been aroused by the interesting work planned by Major Wood. Every medical officer in camp is expected to attend these courses.

NOTES

Major George F. Suker, chief of the ophthalmic division of surgery of the head, addressed the Academy of Medicine at Kalamazoo, November 27, on "Injection of the Lateral Ventricles in the Treatment of Tabetic-Optic Atrophy."

Major John Ridlon was again in camp, giving a course of instruction to the line officers on the care of the feet.

Eighty-Seventh Division, Camp Pike, Little Rock, Ark.

DEC. 9, 1917.

Camp Pike, in general with all southern cantonments, has just received a dose of the "Sunny South" that was entirely unexpected and unappreciated. The thermometer dropped to 2 degrees below zero, and there was a 6 inch fall of snow. The general style of architecture in the cantonment buildings is the same here as elsewhere, except that measures have been taken in northern camps to prepare for cold weather that have not been taken at Camp Pike. In the camps further north, the barracks have been lined with "compo" board, the foundations banked up and ventilators adjusted. At Camp Pike buildings are up on stilts, walls unlined on the inside, and ventilators open. It is a very difficult matter to make buildings of this type comfortable in zero weather, especially if there is a wind of considerable velocity blowing. These conditions are probably healthful and of no importance to robust individuals, but it is a matter for consideration as to the possible effect of such surroundings on persons either going through the period of incubation or recovering from certain contagious diseases. The conditions are ideal for the fresh air and cold air enthusiasts in the treatment of disease.

The state of health of the men in the division may be said to be very good. The base hospital at present is full, more than half of the patients having measles. There have also been scarlet fever and meningitis among some of the more recent arrivals from the North. Soldiers furnish about the same percentage of surgery as do individuals in civil life, so that this department is always reasonably busy.

The heating plant at the hospital has been completed, and the buildings are very warm and comfortable at present.

Major-General Gorgas visited the camp about December 1. Colonel Chamberlin of the Surgeon-General's Office was also a recent visitor.

One of the problems confronting Camp Pike at the time of its construction was the matter of suitable sewage disposal. It was necessary to discharge the sewage into Five Mile Creek, a small stream in this vicinity. This formed a bubbling, fetid and offensive stream which flooded Bayou Meto and Trammel Lake and other swampy areas in this region. A sprinkling filter basin for all sewage has been constructed which renders the sewage inoffensive as far as odor is concerned.

The tuberculosis examination board, under the direction of Major Gath of Cincinnati, although it has been here several weeks, is still very busy. Lieutenant De Witt of this board, formerly a member of the medical officers' training camp at Fort Benjamin Harrison, has been promoted to a captaincy, as have also Lieut. Charles Lerrigo of Topeka in command of Ambulance Company No. 347, Three Hundred and Twelfth Sanitary Train, and Lieut. T. R. Ayres of St. Louis, at present with the regimental infirmary of the Three Hundred and Thirty-Fourth Field Artillery.

Some of the medical officers in this division who have recently taken advantage of a ten day leave of absence in order to visit their homes are: Major J. W. Thornton of Iowa, Capt. J. B. Steele of Tennessee, Capt. Paul R. Howard of Nebraska and Lieut. N. R. Palmer of Missouri.

Eighty-Ninth Division, Camp Funston, Fort Riley, Kan.

DEC. 12, 1917.

During the week just passed, the Eighty-Ninth Division was honored by a visit from Surgeon-General Gorgas and his party, which included Colonel Howard, M. C., Major Vaughan, M. R. C., of the University of Michigan Medical

School, and Dr. Welch of Johns Hopkins. They inspected the base hospital, the camp and its infirmaries, and all expressed themselves as highly pleased with the organization and work of the medical department in this division.

On the first evening of their stay, the Surgeon-General, Dr. Welch and Major Vaughan delivered a short address to all the medical officers of the camp. After extending remarks of greeting to all, the Surgeon-General directed his remarks particularly to the colored medical officers of the Ninety-Second Division. He stated that, as one born and raised in the South, who had watched with interest and appreciation the struggles of a newly freed race toward better things, he thought it particularly commendable that the colored physicians should have taken it on themselves and succeeded in volunteering their services in the Medical Department, in this greatest of all wars for democracy. He stated that he was sure they would give a good account of themselves, both as officers and as physicians.

Dr. Welch, who accompanied the party as epidemiologist, showed the typical modesty of a great man, when he told us that there was more for him to learn from the way the medical department of this camp was conducted than there was for him to teach us.

Major Vaughan stated that, while the division sanitary inspector and the division surgeon had been justly complimented by the two previous speakers, he wished, in addition, to extend his congratulations to the regimental surgeons and other medical officers of the camp who had made the work run smoothly. He said he was sure that all the sacrifices represented by the presence of the officers in the audience before him would be amply repaid in the years to come by the feeling that when their country needed them, they had responded to the call.

ORDERS TO OFFICERS OF THE MEDICAL CORPS

Major JUNIUS F. LYNCH, relieved at Camp McClellan, and *to Camp Stuart*, Newport News, Va., for duty.

Lieut. ROSSNER E. GRAHAM, relieved at Allentown, Pa. and *to Camp Lee*, Petersburg, Va., for duty.

Major ADDISON D. DAVIS, relieved at Camp Kearny, and *to Camp Joseph E. Johnston*, for duty as commanding officer of the base hospital.

Major HENRY J. NICHOLS, relieved from U. S. Army General Hospital No. 1, and *to Walter Reed General Hospital*, Takoma Park, D. C., for treatment.

Lieut.-Colonel WILLIAM E. VOSE, relieved from station at Fort Williams, Me., *to Fort McPherson, Ga.*

Colonel LEIGH A. FULLER, relieved at Fort D. A. Russell, and *to Charleston, S. C.*, to report in person to the commanding general, Southeastern Department, for duty as department surgeon.

Lieut.-Colonel WILLIAM L. LITTLE, relieved at Newport News, Va., and *to Fort Bliss, Texas*, for duty as division surgeon.

Major JESSE R. HARRIS, relieved at Fort Niagara, and *to Ithaca, New York*, Military School of Aeronautics, Cornell University, for duty.

Lieut. HENRY TIMROD SCHIFFLEY, relieved at Camp Sevier, and to report in person to the commanding general, 30th division, for duty in the base hospital.

Lieut.-Colonel JOHN W. HANNER, *to New York City* to command and mobilize Base Hospital No. 116, at the 71st Regiment Armory.

Capt. HERBERT R. DREARY, relieved at Camp McClellan, and *to his home* and honorably discharged from the Medical Corps of the National Guard.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Bowie, Fort Worth, Texas, base hospital, from Camp Meade, Lieut. GEORGE W. KIEHNHOFF, Daphne.

To Camp Funston, Fort Riley, Kan., as member of board for examination of command for tuberculosis, from Fort Worth, Lieut. SAMUEL E. JOHNSON, Clanton.

To Camp Travis, Fort Sam Houston, Texas, to examine the command for mental and nervous diseases, from Baltimore, Lieut. ROBERT H. HOWARD, Tuskegee.

To Fort Oglethorpe, for instruction, Capt. WALTER WILLIS ROSSER, Stevenson; Lieuts. WALTON L. BEAN, Andalusia; LEO C. WOODS, Birmingham; BURTON F. AUSTIN, Chancellor; Hospital Train No. 28 from Fort Oglethorpe, Lieut. ROBERT S. DODSON, Grand Bay.

To New York City, Base Hospital No. 116, for duty from Boston, Capt. PAUL L. COCKE, Birmingham; for instruction in orthopedic surgery, from Fort Ethan Allen, Lieut. DAVID RAMSEY, Pine Apple.

Arizona

To Army Medical School, Washington, D. C., for instruction in orthopedic surgery, from Fort Oglethorpe, Capt. RODERICK D. KENNEDY, Globe.

To New York City, Orthopedic Hospital for instruction in orthopedic surgery, from New York City, Capt. CHARLES T. STURGEON, Globe.

Arkansas

To Camp Beauregard, Alexandria, La., for duty, from Fort Smith, Lieut. WALTER G. EBERLE, Fort Smith.

To Camp Pike, Little Rock, Ark., for duty, from Camp Lee, Lieut. GUY A. McCORMACK, Little Rock.

To Fort Oglethorpe, Ga., for instruction, Lieut. ARTHUR F. HOGE, Fort Smith.

To Little Rock, Ark., to enlist the enlisted personnel of Hospital Unit "T," Capt. ALVIN L. JOBS, Little Rock.

To Walter Reed General Hospital, Washington, R. C., for observation and treatment, Lieut. TRUE S. BURGESS, Russellville.

California

To Camp Fremont, Palo Alto, Calif., base hospital, from Fort Mason, Capt. LOUIS P. HOWE, San Francisco.

To Camp Kearny, Linda Vista, Calif., for duty, Capt. CHARLES L. GARVIN, Los Angeles; Lieut. EDGAR O. CAMPBELL, Santa Barbara; base hospital, Lieut. HOWARD B. DIXON, Daly City; Lieut. CHARLES E. SCHWARTZ, San Francisco.

To Camp Lewis, American Lake, Wash., for temporary duty to examine the command in his specialty, Capt. WILFRED F. BEERMAN, San Francisco.

To Camp Taylor, Louisville, Ky., base hospital, from Fort Oglethorpe, Lieut. ELMER W. SMITH, San Francisco.

To Fort Mason, Calif., Base Hospital No. 30, Capts. HOWARD E. RUGGLES, San Francisco; CHARLES N. RICHARDS, San Jose; Lieuts. CLARK R. GILES, WILLIAM W. WASHBURN, JOHN H. WOOLSEY, San Francisco; from Camp Kearny, Capt. HERBERT S. THOMSON, Berkeley; Lieuts. ERNEST H. FALCONER; HAROLD W. WRIGHT, San Francisco; from Camp Lewis, Lieut. HUDSON SMYTHE, Stockton; from Camp Travis, Lieut. ARTHUR C. GIBSON, San Francisco; from San Francisco, Lieut. ELDRIDGE J. BEST, CHARLES L. TRANTER, San Francisco.

To Fort Riley, for instruction Capts. ROBERT M. JONES, JR., Fresno; GORDON B. HAMILTON, Oakland; Lieuts. BERNARD SHELTON, Long Beach; ERNEST E. WILSON, Walnut Grove; with Evacuation Hospital No. 7, from Camp Cody, Lieut. LIVA C. McLAIN, Bakersfield.

To New York City Orthopedic Hospital, for instruction in orthopedic surgery, from New York City, Lieut. JOSEPH R. JONES, Yreka.

To his home and honorably discharged on account of being physically disqualified for active service, from San Diego, Capt. ALEXANDER PATTERSON, San Francisco.

Honorably discharged, Lieut. SOLOMON C. MISH, San Francisco.

Canal Zone

To Washington, D. C., for duty in Aviation Section, Signal Corps, from Mineola, Capt. EDWARD P. BEVERLY, Balboa.

Colorado

To Camp Custer, Battle Creek, Mich., as president of board for examination of command for tuberculosis, from Camp Bowie, Major GERALD B. WEBB, Colorado Springs; base hospital, from St. Louis, Lieut. FRED H. CARPENTER, Denver.

To Camp Doniphan, Fort Sill, Okla., base hospital, Lieut. RANULPH HUDSTON, Denver.

To Camp Joseph E. Johnston, Jacksonville, Fla., as a member of the board for examination of command for tuberculosis, from Camp Bowie, Lieut. PHILIP A. LOOMIS, Colorado Springs.

To Camp Mills, base hospital, from Camp Mills, Lieut. PHILLIPS M. CHASE, Denver.

To Fort Riley, for instruction, Lieuts. JOSEPH B. SALBERG, Boulder; CARLETON O. BOOTH, Denver; JOSEPH A. KELLY, Oak Creek.

Connecticut

To Fort Oglethorpe, for instruction, Capt. JOHN B. GRIGGS, Hartford; Lieut. EDWARD A. WILLIAMSON, Stamford.

To Fort Slocum, N. Y., for duty, from Fort Ethan Allen, Lieut. M. H. GRISWOLD, Kensington.

To Hoboken, N. J., for duty, from Washington, D. C., Capt. ARTHUR B. COLEBURN, Middletown.

To New York City, for instruction in orthopedic surgery, from Hartford, Lieut. HERMAN M. HURWITZ, Hartford.

To Philadelphia, Pa., for instruction in orthopedic surgery, Capt. ROBERT H. YERGASON, Hartford.

District of Columbia

To Fort Keogh, Montana, for duty, from Fort Snelling, Capt. HARRY L. SCHURMEIER, Washington.

To Fort Oglethorpe, for instruction, Lieuts. CHARLES F. BOVE, GEORGE W. MANNING, Washington.

To Hazelhurst Field, Mineola, L. I., N. Y., for duty, from office of the Chief Surgeon, Major EDWARD G. SEIBERT, Washington.

Honorably discharged, Lieut. TRUE S. BURGESS, Takoma Park.

Florida

To Fort Oglethorpe, for instruction, Capt. MURDOCH L. CRUM, Bowling Green; Lieuts. ROBERT D. MAY, HOWARD C. VON DAHM, Jacksonville; JOHN L. ADAMS, Milligan; GEORGE H. GWYNN, HUMPHREY W. GWYNN, Tallahassee; EUGENE S. GILMER, Tampa; HERBERT A. McCLURE, Walnut Hill.

To New York City, Post-Graduate Medical School for instruction, from Camp Greene, Capt. HARRY A. PEYTON, Jacksonville.

To his home and honorably discharged on account of being physically disqualified for active service, from Camp Meade, Lieut. HARRY C. GALEY, Key West.

Georgia

To Atlanta, Ga., to enlist the enlisted personnel of Base Hospital No. 43, Lieut. EDGAR H. GREENE, Atlanta.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. EARL T. NEWSOM, Camilla.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Capt. WILLIAM B. OREAR, Savannah.

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. JOSEPH A. McGARITY, Draketown.

To Camp Logan, Houston, Tex., base hospital, Major THEODORE R. CERTEL, Augusta.

To Fort Bliss, Texas, with Headquarters Military Police, from Camp Greenleaf, Lieut. JESSE H. HENDRY, Shellman.

To Fort Oglethorpe, for instruction, Lieuts. LUTHER E. KELLEY, Atlanta; JESSE J. EVERETT, Campton; DENNIS F. WELDON, Danelsville; OSCAR S. SPIVEY, Eatonton; CLAUDE B. BROOKINS, Gordon; EUGENE F. THOMASON, Lumber City; WILLIAM T. RANDOLPH, Monroe; CHARLES B. UPSHAW, Rydal; WILLIAM M. WHITE, Watkinsville.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. WALTER E. MOBLEY, Social Circle.

To New York City, Base Hospital No. 116, from Fort Riley, Capt. WILLIAM G. LEE, Macon.

To Philadelphia, Pa., for instruction in orthopedic surgery, Lieut. KENNETH S. HUNT, Milner.

To his home and honorably discharged from Fort Oglethorpe, Lieut. JOSEPH D. LYLE, Savannah.

Hawaii

To his home and honorably discharged from San Diego, Lieut. SAMUEL R. BARNES, Honolulu.

Idaho

To Fort Riley, for instruction, Lieuts. GEORGE B. RANDALL, Buhl; CLAUDE W. WILLIAMS, Laclede; JOHN C. WIIK, Moscow.

To Vancouver Barracks, Wash., for duty, from Camp Lewis, Lieut. FREDERICK W. DIDIER, Harrison.

Illinois

To Boston, Mass., Harvard Medical School, for instruction in orthopedic surgery, Lieuts. ROBERT W. KISPERT, Chicago; BENJAMIN J. SCHWARTZ, Waukegan.

To Camp American University, Washington, D. C., for duty, from Fort Sheridan, Lieut. KARL J. HENRICHSEN, Chicago.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. IRA E. NEER, Springfield.

To Camp Gordon, Atlanta, Ga., base hospital, from St. Louis, Lieut. HUDSON McB. GILLIS, Woodriver.

To Camp Mills, Garden City, L. I., for examining the command in his specialty, Lieut. JOHN T. MacCURDY, Pembroke Lodge.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. ABEL P. M. SANDALH, Chicago.

To Fort Bliss, Texas, with Headquarters Military Police, from Camp Greenleaf, Lieut. JAMES K. JOHNSON, Ellsworth.

To Fort Oglethorpe, for instruction, Lieut. FREDERICK H. MAURER, Peoria.

To Fort Riley, for instruction, Capts. WILLIAM S. BROWN, Cairo; FREDERICK A. FISHER, THOMAS J. O'MALLEY, Chicago; JOHN A. BORTZ, Nauvoo; WALTER L. HOUGHLAND, Peoria; Lieuts. ALEXANDER P. ROBERTSON, Alton; HALLEY A. SMITH, Antioch; ELVEN J. BERKHEISER, Aurora; FRANK J KOTALIK, Berwyn; FRANK A. ANDERSON, SAMUEL AXELRAD, EDWIN J. BARNETT, STEPHEN BIEZIS, BERNARD J. BOLKA, SYLVESTER A. BRENZA, CHARLES B. BROMBERG, HENRY CHRISTIANSEN, ROY E. CHRISTIE, FLOYD M. CLARK, HERMAN C. CLAYTON, LAZARUS COHLER, JOHN E. DAMRON, ABRAHAM L. DESSER, HARRY J. DWYER, VICTOR FINSAND, ULYSSES S. GEIGER, EARL W. GILROY, ELMER A. GUNDERSON, RUSSELL A. HENNESSEY, CARL B. HERRMANN, WILLIAM ISRAELSON, EDWARD J. JENKINSON, CARL J. JOHANNESSON, HENRY C. JOHNSON, ROBERT F. KNOLL, MIECISLAUS J. KOSTRZENSKI, THOMAS LAHNERS, EDWARD J. MacDONALD, FRANK MADLEC, JOHN E. McGUIGGAN, FRED McK. MILLER, MAYER A. NEWHAUSER, HARRY S. NORTON, JOHN F. OATES, HOWARD S. PERRY, WILLIAM J. PICKETT, CHARLES E. PITTE, HAROLD A. RAMZER, ABRAHAM R. RIMMERMAN, FRANK J. SCHICK, FRED F. SCHWARTZ, WILLIS I. SILVERSTEIN, HARRY S. SOLOMON, HENRY A. STAIB, Chicago; CHARLES L. KERRICK, Chrisman; WARREN C. BLIM, Crete; GEORGE O. DE MOSS, Cropsey; THOMAS C. McCLURE, Dahlgren; MELVIN L. HOLE, Danville; GILBERT F. HARRIS, Easton; LAWRENCE J. BERNARD, East St. Louis; CLYDE J. CHAMNESS, Elkville; ALEXANDER W. FORDYCE, Gilman; HARRY P. REUSS, Granite City; HERMAN C. KOCH, Harvard; HARRY A. MYERS, Joliet; GEORGE J. BRAND, Lafayette; EDGAR C. COOK, Mendota; WILLIAM H. EVANS, Murphysboro; KEITH T. MEYER, Oak Park; HUGH E. COOPER, Peoria; HARRY H. HANLY, Peoria; GEORGE W. KIMBALL, Stewart; HORACE M. FRANCIS, Woodstock; LEO V. GATES, Zeigler.

To Fort Robinson, Neb., for duty, Lieut. ALBERT N. MACKEY, Aledo.

To Fort Slocum, N. Y., for duty, from Fort Ethan Allen, Lieut. MAURICE L. PUFFER, Downers Grove.

To Milwaukee, Wis., for duty in the office of the attending surgeon, from Chicago, Lieut. CLAUDE H. OGDEN, Chicago.

To New York City, for instruction in orthopedic surgery, Lieut. IRWIN H. CUTLER, Chicago; from Chicago, Lieut. VINCENT W. KOCH, Chicago.

To Philadelphia, Pa., for instruction in orthopedic surgery, Capt. EDSON B. FOWLER, Evanston.

To St. Louis, Mo., Washington University, for instruction in Urology and Dermatology, from Fort Oglethorpe, Lieut. GEORGE W. BOWMAN, Ashley.

Honorably discharged, Capt. WALTER P. McGIBBON, Chicago.

To the inactive list, from Fort Benjamin Harrison, Lieut. IRVING A. PORGES, Chicago.

Indiana

To Camp American University, Washington, D. C., for duty, from Fort Benjamin Harrison, Lieuts. CLARENCE K. JONES, Indianapolis; GEORGE T. JOHNSON, Terre Haute.

To Camp Green, Charlotte, N. C., base hospital, from Roosevelt Hospital, New York City, Lieut. BROWN S. McCLINTIC, Peru.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. MELCHERD H. KUTCH, Terre Haute.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. SEWELL B. COULSON, Indianapolis.

To Camp Taylor, Louisville, Ky., as medical member of examining board and recruiting officer, from Fort Benjamin Harrison, Lieut. PAUL B. COBLE, Indianapolis; for duty, from Camp Custer, Lieut. PERRY C. TRAVER, South Bend.

To Chickamauga Park, Ga., for duty from Fort Benjamin Harrison, Lieut. CLAUDE D. HOLMES, Indianapolis.

To Fort Oglethorpe, for instruction, Capt. GEORGE T. WILLIAMS, Crawfordsville; Lieut. ANDREW F. GUGSELL, Ferdinand; from Houston, Texas, Lieut. MERTON A. FARLOW, Milroy; with Ambulance Co. No. 42, from Camp Custer, Lieut. ELTON L. TITUS, Indianapolis.

To St. Louis, Washington University, for instruction in urology and dermatology, from Camp Grant, Lieut. WARREN W. HEWINS, Evansville.

Iowa

To Fort Riley, for instruction, from Camp Dodge, Major CHARLES E. RUTH, Des Moines; Capt. BENJAMIN C. DYER, Ames; for instruction, Capts. MARK C. JONES, Boone; ALANSON M. POND, Dubuque; FRANK G. RHODES, Sioux City; Lieut. LOUIS B. AMICK, Millersburg.

Kansas

To Army Medical School, Washington, D. C., for duty, Lieut. GEORGE M. GRAY, Kansas City.

To Fort Riley, for instruction, Lieuts. SAMUEL N. MALLISON, Canton; CHARLES A. THOMAS, Edna; CHARLES S. FRY, St. George; ALBERT M. BROWN, Wichita.

To St. Louis, Washington University, for instruction in urology and dermatology, from Camp Taylor, Lieut. CLYDE M. ZINK, Wellington.

Kentucky

To Boston, Harvard Medical School, for instruction in orthopedic surgery, from Fort Oglethorpe, Lieut. JOHN W. STEPHENSON, Ashland.

To Fort Oglethorpe, for instruction, Major JULIAN P. McCLYMONDS, Lexington; Lieuts. EUGENE C. HARTMAN, Brandenburg; EARL M. CUTLER, SELMAR F. HAUSER, CLIFFORD N. HEISEL, THOMAS H. KELLY, Covington; HAVILAND CARR, Cynthiana; HARRY F. MANN, Demonsville; RICHARD R. SNOWDEN, Irvine; HYLAN H. WOODSON, Kirkmansville; HUNTER W. GINGLES, Kirksey; JOSEPH R. ALLEN, Langley; LYTLE ATHERTON, Livermore; EDWARD L. IRVIN, MARION E. PIRKEY, ISAAC L. WYATT, Louisville; JOHN R. PRYOR, Mayfield; GIDEON W. STONE, Middlesboro; FREDERICK K. BLAIR, Morehead; HARLAN G. CLAYPOOLE, Mt. Olivet; HOMER A. SUTTER, Newport; MILTON J. STERN, Paris; RAYMOND M. EVANS, Tompkinsville; NATHAN FELD, Winchester.

To Fort Thomas, Ky., for duty, from Camp Dix, Capt. JOHN L. PHYTHIAN, Newport.

To Lexington, Ky., to enlist the enlisted personnel of Base Hospital No. 40, Lieut. GEORGE H. WILSON, Lexington.

To his home and honorably discharged from Fort Oglethorpe, Capt. EDWARD W. FORD, Hartford.

Louisiana

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from Fort Oglethorpe, Lieut. ERNASTUS L. MILLER, Longville.

To Camp Pike, Little Rock, Ark., for duty, from Camp Pike, Lieut. HOWARD P. DOLES, Blanchard.

To Fort Oglethorpe, for instruction, Lieuts. HAROLD G. F. EDWARDS, Abeville; EDWARD E. ARCHIBALD, Alberta; RALPH P. EVANS, Alexandria; WALTER P. LAMBETH, Allendale; HOWARD P. DOLES, Blanchard; ALARIC C. WHITTINGTON, JOSEPH L. EWING, Dodson; EDWIN M. LEVY, Jackson; BROOKS C. GARRETT, Shreveport; PATRICK H. FLEMING, St. Martinville; JOSEPH M. GORTON, Waterproof.

To his home and honorably discharged, from Fort Oglethorpe, Lieut. OLIVER W. ALFORD, Bovalusa.

Maine

To Camp Wheeler, Macon, Ga., base hospital, from Harvard Medical School, Capt. WILLIAM C. WHITMORE, Portland.

To Fort Oglethorpe, for instruction, Lieuts. FREEMEN P. GLASON, GARDINER; ISAAC L. GORDON, Lincoln; WYVERN A. COOMBS, Westbrook; FRED E. WHEELER, West Paris.

To Fort Slocum, N. Y., for duty, from Fort Ethan Allen, Lieut. CHARLES E. COOK, Jr., South Berwick.

Maryland

To Baltimore, Md., Johns Hopkins Medical School, from duty as contract surgeon, Lieut. LEWIS H. WEED, Baltimore.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. JULIE R. ROLENSON, Baltimore.

To Camp Dodge, Des Moines, for duty, from Fort Des Moines, Major FRANK MARTIN, Baltimore.

To Camp Joseph E. Johnston, Jacksonville, Fla., as adjutant of the base hospital, from Camp Hancock, Lieut. IRVING K. LOVETT, Baltimore.

To Fort Oglethorpe, for instruction, Lieuts. CLAUDE C. KELLY, THEODORE S. MOISE, JOHN C. NORTON, CLARENCE M. REDDIG, HARRY E. WILSON, Baltimore; WILMER M. PRIEST, North East; HUGH R. SPENCER, Parkton; MILFERT W. MYERS, Taneytown.

To Fort Slocum, N. Y., for duty, from Fort Ethan Allen, Lieut. ANTONE C. SORENSEN, Baltimore.

To New York City, to inspect the Neurological School, then to Montreal, Quebec, Toronto, Ontario and Winnipeg, Manitoba, Canada, for duty and on completion to his proper station, Capt. CHARLES BAGLEY, Jr., Baltimore; for intensive training in his specialty, from Baltimore, Lieut. HENRY E. AUSTIN, Baltimore.

To Washington, D. C., for duty in Aviation Section, Signal Corps, from Millington, Capt. COMPTON WILSON, Friendship.

To his home and honorably discharged, Major A. COTTON, Baltimore.

Massachusetts

To Army Medical School, Washington, D. C., as professor of orthopedic surgery, Major ELLIOT G. BRACKETT, Boston.

To Boston, Mass., Harvard Medical School, for instruction in orthopedic surgery, Lieuts. EARLE M. HUSSEY, Fall River; GEORGE MOSSMAN, Westminster.

To Camp Beauregard, Alexandria, La., base hospital, from St. Louis, Lieut. CHARLES F. CANEDY, Greenfield.

To Camp Grant, Rockford, Ill., base hospital, Capt. JOHN BRYANT, Brooklyn.

To Fort Oglethorpe for instruction, Capt. NOEL E. GUILLET, Brookline; Lieuts. WILLIAM E. BROWNE, JAMES C. LEAVITT, Boston; CHARLES H. MERRILL, Lynn; EMIL U. DILLENBACK, Springfield.

To Hoboken, N. J., for duty, from Fort Myer, Lieut. EDWARD H. FRENCH, Boston.

To Morrison, Va., for duty, from Langley Field, Lieut. WILLIAM L. CONNERY, Springfield.

To New York City, Base Hospital No. 116, from Boston, Capt. SAMUEL W. ELLSWORTH, Boston.

To St. Louis, Mo., for instruction in urology and dermatology, Lieuts. ROBERT J. EVANS, Jr., JOHNSTON L. CHERESKIN, Springfield.

To his home and the inactive list on account of being physically disqualified for active service, Lieut. HILMAR O. KOEFOD, Boston.

Michigan

To Camp MacArthur, Waco, Tex., base hospital, from Harvard Medical School, Capt. CURTIS D. PILLSBURY, Ann Arbor.

To Camp Mills, Garden City, L. I., to examine the command in his specialty, Lieut. NICHOLSON W. PINTO, Kalamazoo.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Capt. FRANK C. KINSEY, Grand Rapids.

To Fort Riley, for instruction, Capt. LOUIS N. YORKES, Elk Rapids; Lieuts. HAROLD B. MARKHAM, Marquette; WILLIAM E. ALLEGER, Pittsford; LEON W. MARTIN, Plainwell; from Ann Arbor, Lieut. GORDON H. BAHLMAN, Flint; from Camp Custer, Lieuts. SPENCER VAN BARNUM, Coloma; WESLEY A. GIFFIN, Deckerville; FRANK W. GOWDY, St. Joseph.

To Hoboken, N. J., for duty, from Camp Sherman, Capt. GRIFFITH A. THOMAS, Detroit.

To Jeffersonville, Ind., Depot Quartermaster, for duty, from Fort Oglethorpe, Lieut. CYRUS B. GARDNER, Alma.

To New York City, for instruction in orthopedic surgery, from Ironwood, Capt. EUGENE B. STEBBINS, Ironwood.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, Lieut. LELAND H. TOWER, Battle Creek.

Minnesota

To Camp Beauregard, Alexandria, La., base hospital, from St. Louis, Lieut. FLOYD W. BURNS, St. Paul.

To Camp Dodge, Des Moines, Ia., base hospital, from Minneapolis, Lieut. CHARLES E. CONNOR, Minneapolis.

To Camp Greene, Charlotte, N. C., for duty, from Fort Snelling, Lieut. ELMER H. LUTZ, St. Paul.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. HARVEY M. SLATER, Minneapolis.

To Camp Upton, N. Y., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. FREDERICK P. MOERSCH, Minneapolis.

To Fort Riley, for instruction, Lieuts. FRANK J. ELIAS, Duluth; VERNE S. COBOT, JAMES N. DUNN, Minneapolis; CLARENCE A. RATHBUN, Rice; STEWART H. ANDERSON, Wells.

To Hoboken, N. J., for duty, from Fort Snelling, Capt. MARTIN LARSON, St. Paul.

To Minneapolis, Minn., to enlist the enlisted personnel of Base Hospital No. 26, Lieut. GORDON M. CLARK, Minneapolis.

To Philadelphia, Pa., for instruction in orthopedic surgery, Lieut. IVER F. SELLESETH, Glenwood.

To his home and honorably discharged from the Medical Reserve Corps on account of being physically disqualified for active service, from Camp Custer, Capt. FRANKLIN R. WRIGHT, Minneapolis.

Mississippi

To Army Medical School, Washington, D. C., for duty, Lieut. WALTER B. DODSON, Jackson.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. AUGUST J. PEDEST, Natchez.

To Fort Oglethorpe, for instruction, Capt. ZACHARIAN J. SCOTT, Winona; Lieuts. ABNER J. BARNETT, Carthage; ARTHUR A. SPARKMAN, Cleveland; DUDLEY R. MOORE, Cockrum; LEON C. ELLIS, Columbus; JOHN D. SIMMONS, Gunnison; WILLIAM J. AYCOCK, Hohenlinden; WIRT A. RODGERS, Jackson; ROBERT B. HARPER, McBride; GEORGE R. STORM, Phillip; BURRIE E. BURCHFIELD, Ruleville.

Missouri

To Boston, Mass., Harvard Medical School, for instruction in orthopedic surgery, Lieuts. CHARLES W. BRESSLER, Grant City; FRED C. CALLAWAY, Ravanna.

To Camp Funston, Fort Riley, as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Worth, Lieut. ALLEN G. WAINWRIGHT, St. Louis.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. MOSES H. TOPPING, Flat River.

To Camp Lewis, American Lake, Wash., base hospital, Capt. JOHN BUTLER, Hawk Point.

To Camp Pike, Little Rock, Ark., base hospital, from St. Louis, Lieut. JAMES R. ELLIOTT, Kansas City.

To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. EDWARD L. COOLEY, St. Louis.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Capt. MINFORD A. HANNA, Kansas City; to examine the command for mental and nervous diseases, from Baltimore, Lieut. WILLIAM G. PATTEN, Farmington.

To Fort Riley, for instruction, Lieuts. WILLIAM O. FINNEY, Chaffee; HERMAN A. LAFORCE, Jasper; FRED E. DARGATZ, Kearny; THOMAS F. EDWARDS, Keota; VIRGIL S. DANGERFIELD, Luray; CLAUDE J. ALLEN, Rich Hill; CLAUDE D. HALLEY, CARL J. MULLER, St. Louis.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. JAMES B. WOOD, St. Louis.

To Philadelphia, Pa., for instruction in orthopedic surgery, Lieut. HENRY L. HESS, Kansas City.

To Roosevelt Institute, for instruction in laboratory work, Lieut. BERNARD J. McMAHAN, St. Louis.

To his home and honorably discharged, from Camp Meade, Lieut. BENJAMIN F. JOHNSON, Buffalo; from Fort Riley, Lieut. ARTHUR O. TUCKER, Maysville.

Honorably discharged, Lieut. WILL L. FREEMAN, St. Charles.

Montana

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Oglethorpe, Lieut. JOHN J. TOBINSKI, Missoula.

To Camp Shelby, Hattiesburg, Miss., base hospital, from St. Louis, Lieut. ROBERT L. OWENS, Hamilton.

To Camp Sherman, Montgomery, Ala., base hospital, from St. Louis, Lieut. KARL A. SNYDER, Great Falls.

To Fort Riley, for instruction, Lieuts. JOHN H. BRIDENBAUGH, Billings; WILLIAM D. MADDEN, Great Falls; from Fort Riley, Lieut. EDWARD O'NEILL, Kalispell.

Nebraska

To Army Medical School, Washington, D. C., for duty, Lieut. AUGUST F. JONES, Omaha.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. DEXTER D. KING, York.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. HARRY J. JENKINS, Omaha.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. JUDD A. STRONG, Kearny.

To Camp Joseph E. Johnston, Jacksonville, Fla., as member of board for examination of command for tuberculosis, from Camp Bowie, Lieut. JOHN F. ALLEN, Omaha.

To Fort D. A. Russell, Wyoming, for temporary duty, from Fort Riley, Capt. CHARLES H. CAMPBELL, Columbus.

To Fort Riley, for instruction, Lieuts. RALPH P. HIGGINS, CHARLES L. HOUSEL, Ansley; GEORGE F. HAWES, Arlington; CHARLES E. PALMER, David City; LEONARD O. RIGGERT, Norfolk; CHARLES W. W. HARMS, JOHN HOLST, Jr., JOHN R. KLEYLA, Omaha; LESTER K. STRATE, Sutton; from Fort Riley, Lieut. CHARLES C. WALLINGSFORD, Ogallala.

To New York City, for instruction in orthopedic surgery, from Fort Oglethorpe, Capt. CHARLES E. REMY, Johnstown; Base Hospital No. 116, from Camp Dodge, Lieut. BENJAMIN R. McGRATH, Grand Island.

New Hampshire

To Camp Custer, Battle Creek, Mich., base hospital, from St. Louis, Lieut. JOHN B. WARDEN, Whitefield.

To Fort Oglethorpe, for instruction, Lieuts. EARL P. CUSHMAN, Claremont; PHILIP McQUESTON, Nashua; ERNEST L. BELL, Plymouth; WILLIAM H. SHANAHAN, Somersworth.

To Fort Slocum, N. Y., for duty, from Fort Ethan Allen, Capt. WILLIAM H. MITCHELL, London.

New Jersey

To Fort Logan, Houston, Tex., base hospital, from Fort Oglethorpe, Lieut. MAURICE COHEN, Patterson.

To Fort Oglethorpe, for instruction, Lieuts. GEORGE B. VERBECK, Caldwell; HENRY T. WEBB, Elmer; THOMAS M. BARBER, Mor-

ristown; LYMAN B. HOLLINGSHEAD, Pemberton; IRVING F. CRAM, ROBERT HAMILTON, Wrightstown.

To Fort Riley, for instruction, from Camp Custer, Lieut. BENNETTE W. HOAGLAND, Woodbridge.

To New York City, Base Hospital No. 116, Lieuts. VICTOR S. SEIDLER, Montclair; FREDERIC A. ALLING, Newark.

Honorably discharged on account of being physically disqualified for active service, Lieut. GRANT E. KIRK, Camden.

New York

To Boston, Mass., Harvard Medical School, for instruction in orthopedic surgery, Lieut. DUDLEY J. MORTON, New York City; from Fort Ethan Allen, Lieut. ALFRED H. PARSONS, Great Neck.

To Camp Beauregard, Alexandria, La., base hospital, Lieut. STANLEY S. INGALLS, Parish.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Lieut. HORD SHARP, New York City.

To Camp Devens, Ayer, Mass., base hospital, Lieut. ARTHUR H. TERRY, Jr., New York City.

To Camp Greenleaf, Fort Oglethorpe, Ga., Evacuation Hospital No. 6, from Cornell Medical College, Lieut. LOUIS GOLD, Brooklyn.

To Camp Jackson, Columbia, S. C., base hospital, and on completion to his proper station, Capt. GEORGE DRAPER, New York City.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from Fort Oglethorpe, Lieut. JOHN T. WATKINS, New York City; as member of board for examination of command for tuberculosis, from Camp Bowie, Lieut. ROBERT E. PLUSKETT, Whitehall.

To Camp Lee, Petersburg, Va., base hospital, Capt. ROLAND O. MEISENBACH, Buffalo.

To Camp Mills, Garden City, L. I., N. Y., to examine command in his specialty, Capt. GEORGE A. SHARP, Beacon; from Fort Sheridan, Lieut. JOHN T. MacCURDY, New York City. For duty, from Camp Mills, Capt. JOHN F. W. MEAGHER, Brooklyn; Lieuts. LEIZER GRIMBERG, New York City; SAMUEL W. HAUSMAN, Ogdensburg; WARD W. MILLIAS, Rome; from Neurological Institute, Lieut. WILLIAM G. DICKSON, Oneonta; for temporary duty, from New York, Lieut. ARTHUR P. POWELSON, Walden.

To Camp Taylor, Louisville, Ky., for duty, from Fort Ethan Allen, Lieut. RALPH E. ROBINSON, Belmont.

To Camp Upton, L. I., N. Y., to examine command for mental and nervous diseases, from Ann Arbor, Lieut. GEOFFREY C. H. BURNS, Central Islip.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. ALBERT C. MARGULIES, Brooklyn.

To Fort Bliss, Texas, as division sanitary inspector, from Camp Green, Major JOHN T. SPRAGUE, St. George.

To Fort Foster, N. Y., for duty, Lieuts. JOHN D. BOWEN, Binghamton; RAYMOND J. DEVINE, Syracuse.

To Fort Oglethorpe, for instruction, Major EDWARD A. SOUTHALL, Buffalo; Capts. WILLIS S. COBB, Corning; REED B. BONECOU, Ithaca; EVERETT C. BRENNAND, New York City; Lieuts. LOWELL B. ECKERSON, ABRAHAM GOTTLEIB, GEORGE R. HORTON, JOHN H. REYNOLDS, Brooklyn; FREDERICK BERNSTEIN, Glen Cove; JACOB H. HIRSCH, Haverstraw; ADDISON H. BISSELL, JOSEPH M. LINETT, RUDOLPH D. ORTH, MAURICE M. POMERANZ, ROBERT SHAPIRO, MAX K. SILBERMAN, GROVES B. SMITH, New York City; MORRIS R. BRADNER, BERNARD McD. KRU, Warwick.

To Fort Riley, Evacuation Hospital No. 7, from Fort Riley, Capt. CALVERT M. DEFOREST, Canastota.

To Fort Slocum, N. Y., for duty, from Fort Ethan Allen, Lieut. GEORGE E. STEVENSON, Himrod.

To New York City, as chief of the Medical Service, U. S. A. G. H. No. 1 from Camp Sherman, Major DUDLEY D. V. ROBERTS, Brooklyn; as chief of the surgical service in Base Hospital No. 116, from Washington, Major JOHN B. WALKER, New York City; Base Hospital No. 116, for duty, from Camp Devens, Capt. THEODORE J. ABBOTT, New York City; from Camp Meade, Lieut. WILLIAM BLANCARD, New York City; from Camp Mills, Capt. EDWIN G. ZABRISKIE, New York City; from Philadelphia, Lieut. WILLIAM S. GLENN, Jr., Brooklyn Orthopedic Hospital for instruction, from New York City, Capt. LEO B. MEYER, Lieut. ISAAC REITSFELD, New York City. To enlist the enlisted personnel of Base Hospital No. 116, Capt. HARRY C. W. SCHULTZ DE BRUN, New York City.

To Philadelphia, Pa., for instruction in orthopedic surgery, Lieuts. HARRY D. SONNENSCHEIN, New York City; EARL E. WANDERWERKER, Schuylerville.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, from Camp Jackson, Lieut. GEORGE B. UBEL, Salamanca.

To Walter Reed General Hospital, Takoma Park, D. C., for instruction in tuberculosis examinations, Capt. GOSE KREMER, New York City.

To Watertown, Mass., Watertown Arsenal, for duty, from Fort Ethan Allen, Lieut. ARTHUR L. TINKESS, La Fargeville.

To Williamsbridge, N. Y., United States General Hospital No. 1 for duty, Lieut. WALTER S. WOODRUFF, Mount Vernon.

To his home and honorably discharged, from Camp Upton, Capt. OSMAN F. KINLOCH, Troy.

North Carolina

To Camp McClellan, Anniston, Ala., base hospital, from Army Medical School, Lieut. HICKMANN RAY, Raleigh.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. CARL W. BELL.

To Fort Oglethorpe, for instruction, Lieuts. ARTHUR W. DEANS, Battleboro; COLIN SHAW, Burgaw; RALPH L. DANIELS, Coldsboro; WILLIAM H. SLOAN, Garland; CARL P. PARKER, Garysburg; EDWARD C. ASHBY, Greensboro; DAVID T. LONG, Hurdle Mills; GEORGE R. PATRICK, Lowell; ROBERT L. PAYNE, Monroe; ALONZO H. MYERS, North Wilkesboro; FRANK B. GARRETT, Rockingham; ROBERT P. BECKWITH, Rosemary; SAMUEL S. MONTAGUE, Roxboro; FRANK W. H. LOGAN, Rutherfordton; JACOB H. ROZELLE, Salisbury; BURNICE E. MORGAN, GRADY A. MORGAN, Stocksville; HARRY G. THIGPEN, Tarboro; RALPH C. SADLER, Whiteville; James F. Robertson, Jr., Wilmington; JAMES C. BRASWELL, Jr., Wilson; ROBERT J. LOVILL, Wingate; JACK H. HALL, Woodsdale.

To New York City, Base Hospital No. 116, for duty, Lieut. WILLIAM E. YOULAND, Lakeview.

To Oklahoma City, Okla., for instruction in orthopedic surgery, from Camp Gordon, Lieut. HUGH A. THOMPSON, Raleigh.

To Washington, D. C., Washington Barracks, for duty, from Fort Ethan Allen, Lieut. JOHN THAMES, Wilmington.

North Dakota

To Camp Beauregard, Alexandria, La., base hospital, from Fort Riley, Lieut. GEORGE V. JAMIESON, Devils Lake.

To Fort Riley, for instruction, Capts. WILLIAM A. GERRISH, ADOLPHUS W. GUEST, Jamestown; Lieuts. HUGO MELLA, Bismark; JOHN G. ABBOTT, Hope; CAMPBELL SANSING, Valley City.

Ohio

To Army Medical School, Washington, D. C., for duty, Lieut. CHARLES S. HAMILTON, Columbus.

To Camp Cody, Deming, N. M., base hospital, from St. Louis, Lieut. WILLIAM S. NICHOLS, Cleveland.

To Camps Custer, Grant, Dodge, Funston, Fort Thomas, Camp Sherman, Fairfield, Ohio; Columbus Barracks, to investigate the control of venereal diseases and on completion to Columbus, Ohio, for conference with the State Commissioner of Health of Ohio, Capt. EUGENE F. McCAMPBELL, Columbus.

To Camp McClellan, Anniston, Ala., base hospital, from St. Louis, Lieut. ROY F. JOLLEY, Richwood.

To Camp Mills, Garden City, L. I., for duty from Camp Mills, Lieut. JOHN C. GEORGE, Dayton.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. LEWIS A. OSTER, Cleveland.

To Fort Oglethorpe, for instruction, Lieuts. CLARK E. SHARP, Chillicothe; GEORGE B. FAULDER, JAMES B. STEWART, JAMES H. WARREN, Columbus; FREDERICK SWING, Harrison.

To Fort Riley, base hospital, Lieut. PATRICK S. MURPHY, Cleveland; for instruction, Lieut. GLEN E. CHENOWETH, Lima.

To New York City, Base Hospital No. 116, from Fort McPherson, Lieut. FLOYD W. McRAE, Jr., Cleveland.

To report to the governor of the state as medical adviser, Lieut. CHARLES S. HAMILTON, Columbus.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, from Camp Custer, Lieut. MURREY B. McCONIGLE, Toledo.

To his home and honorably discharged, from Camp Sherman, Capt. ELMORE E. ADEL, Columbus; from Fort Oglethorpe, Lieut. BERNARD R. LEROY, Athens.

Oklahoma

To Fort Riley for instruction, Lieuts. ROSCOE R. AULICK, Carson; WALKER R. MARKS, Vinita; from Camp Doniphan, Lieuts. RAYMOND H. FOX, Altus; DANIEL S. LEE, Guymon; CHARLES C. SIMS, Healdon.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, Lieut. JOOL S. HOOPER, Tulsa; from Camp Sherman, Lieut. CHONNER P. CHUMLEY, Oklahoma.

Oregon

To Camp Lewis, American Lake, Wash., for duty, from Camp Lewis, Major CALVIN S. WHITE, Portland.

To Fort Riley for instruction, Lieut. CHARLES F. ENGELS, Portland.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, Lieut. BENJAMIN N. WADO, Portland.

Honorably discharged on account of being physically disqualified for active service, Lieut. BENJAMIN F. DEVERE, Oakland.

Pennsylvania

To Army Medical School, Washington, D. C., for duty, Lieut. JAMES C. SMALL, Chambersburg.

To Atlantic City, N. J., Camden, Trenton and Newark, N. J., Providence, R. I., New Haven, Bridgeport and Hartford, Conn., for duty and on completion to his proper station in Washington, Major HENRY D. JUMP, Philadelphia.

To Boston, Mass., Harvard Medical School, for instruction in orthopedic surgery, Lieuts. JOHN H. ALEXANDER, BROWN FULTON, Pittsburgh.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. ERNEST M. DORSETT, Philadelphia; from New York City, Lieut. THOMAS S. MEBANE, Wilkes-Barre.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Lieut. JOHN E. NEWHOUSE, Pittsburgh.

To Camp Dix, Wrightstown, N. J., for duty, from Post-Graduate Hospital, Lieut. ROBERT E. DAVISON, Pittsburgh.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Oglethorpe, Lieut. JOHN P. MAUS, Philadelphia.

To Camp Green, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. WILLIAM P. CLANCY, Clarendon; from New York City, Lieuts. JOSEPH G. FERNBACH, Philadelphia; ROY L. SCOTT, Sayre.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from School of Roentgenology, Pennsylvania, Lieut. SAMUEL B. HARRIS, Norwood Station.

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. ALBERT J. WINEBRAKE, Scranton.

To Camp Taylor, Louisville, Ky., base hospital, from St. Louis, Lieut. THOMAS S. HICKS, Braddock; for temporary duty, base hospital, from Chickamauga Park, Lieut. HOMER P. PROWITT, Washington.

To Fort Bliss, El Paso, Texas, for duty, Lieut. HUGH M. SHANNON, Philadelphia.

To Fort Oglethorpe, for instruction, Capt. ALEXANDER R. KIDD, Connellsville; Lieuts. JESSE N. SWICK, Beaver Falls; JOHN C. CRIST, Chester; WILLIAM G. FRANCIS, Coatesville; DON D. BROOKS, Connellsville; DONALD B. COOVER, Gettysburg; PAUL M. BLACKBURN, Greensburg; PETER B. MULLIGAN, Hazelton; BARTON BROWN, Linden; SAMUEL FIRESTONE, JR., McKeesport; HARKLEY C. ALBRIGHT, JOHN V. ALLEN, JR., WILLIAM H. ANNESLEY, GEORGE F. BAIER, SAMUEL CHARTOCK, ABRAHAM E. COLCHER, JOHN M. CONNELLY, JOHN R. DAVIES, JR., OMER R. ETTER, ISRAEL SPIERS, Philadelphia; ROY D. CHAMPLIN, Reading; CAREY C. BRADIN, JOHN R. FASON, Tyrone; ALBERT E. COUGHANOUR, Uniontown; ROBERT B. BROWN, RAYMOND T. FRANCIS, Waynesboro; JOSEPH F. DELPHIN, Wilkes-Barre; FRANCIS R. WISE, York; from New York, Lieut. CHARLES E. YOHO, Pittsburgh.

To Fort Riley, base hospital, Lieut. HENRY W. CATTELL, Philadelphia.

To Fort Sam Houston, Tex., for duty, from Camp Greenleaf, Lieut. FREDERICK V. LICHTENFELS, Pittsburgh.

To Fort Washington, Md., for duty, from Fort Ethan Allen, Lieut. CLARENCE E. LINCOLN, Wayne.

To Hoboken, N. J., for duty, from Rockefeller Institute, Lieut. PHILIP F. WILLIAMS, Philadelphia; from Takoma Park, Lieut. JAMES H. BALDWIN, Philadelphia.

New York City, Base Hospital No. 116, for duty, from Evans Dental Institute, Capt. CARLTON N. RUSSELL, Philadelphia; for instruction in orthopedic surgery, Lieut. HARRY O. POLLOCK, Wilmording.

To Philadelphia, Pa., for instruction in orthopedic surgery, Lieuts. FRANK P. McCARTHY, Erie; SCOTT A. NORRIS, Homestead; ISADORE M. LEAVY, Philadelphia; HENRY J. GILES, Pittsburgh; JAMES B. HELLER, Pottsville.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, Lieut. JAMES K. ANDERSON, Pittsburgh.

To his home and honorably discharged from Camp Stuart, Lieut. FRANK L. KNOX, Clayville.

To his home and honorably discharged on account of being physically disqualified for active service, from United States Army General Hospital, Lieut. SAMUEL BRISTER, Philadelphia.

Rhode Island

To Fort Oglethorpe, for instruction, Lieut. ARTHUR F. ANDERSON, Providence.

To New York City, Base Hospital No. 116, for duty, from Camp Devens, Capt. CHARLES H. HOLT, Pawtucket.

South Carolina

To Fort Bliss, Texas, as assistant division surgeon, from Fort Oglethorpe, Lieut. LAWRENCE R. KIRKPATRICK, Bennettsville.

To Fort Oglethorpe for instruction, Lieuts. HARRISON A. PRUITT, Anderson; HILLAND S. THOMAS, Chester; JOSEPH A. DILLARD, Columbia; JOHNSTON PEOPLES, Estill; LANDRUS W. WOOD, Greer; JOSEPH E. THOMAS, Jefferson; JOE P. JEWELL, Piedmont; LADSON D. BOONE, Romesville; GRADY S. CLINKSOALES, Starr; from Camp Sevier, Lieut. ASHLEY B. WEATHERSBEE, Belton.

To Philadelphia, for instruction in orthopedic surgery, Lieut. ROBERT T. FERGUSON, Gaffney.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, from Fort Oglethorpe, Lieut. JAMES M. WALLACE, Greeneville.

To his home and honorably discharged, Lieut. ANDREW T. BAIRD, Darlington.

South Dakota

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Lieut. WILLARD A. BATES, Northville.

To Fort Riley, for instruction, Lieut. WILLIAM E. M. DEVERS, Mitchell.

To his home and honorably discharged from Fort Oglethorpe, Lieut. GEORGE H. RICHARDS, Clear Lake.

Tennessee

To Camp Bowie, Fort Worth, Texas, base hospital, from St. Louis, Lieut. THOMAS A. MITCHELL, Nashville.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Capt. LEON L. MEYER, Memphis.

To Camp Sevier, Greenville, S. C., base hospital, from St. Louis, Lieut. DORSEY T. GOULD, Lawrenceburg; for duty, from Camp Sevier, Lieut. FLEETWOOD GRUVER, Nashville.

To Camp Oglethorpe, for instruction, Lieuts. LAWRENCE J. LINDSEY, Covington; LLOYD S. NEASE, Del Rio; CHARLES T. RICHARDSON, SEYMOUR H. ROWLAND, GETTIE T. SHEFFIELD, Memphis; PHILLIP J. TRENTZSCH, Rives; LONNIE O. WILKERSON, Stanton; EDWARD S. STEWART, Summertown; from Little Silver, Lieut. CLEVELAND PAYNE, Oakland.

Texas

To Fort Oglethorpe, for instruction, Lieuts. MAURY J. PERKINS, Alice; MATTHEW F. KREISLE, Austin; STERLING C. WOOD, Bessmay; WILLIAM L. HESTER, Burkett; IVISON GRIMES, Camden; GEORGE T. VAN ZANDT, Cameron; JOSEPH E. MAZIS, Clayton; WALDO B. LAIN, Cooper; ELMORE G. BRITTAIN, Dallas; LUM M. DAVIS, Donna; JESSE P. LOCKHART, Eden; CHARLES W. GRAY, El Campo; ERWIN J. CUMMINS, THOMAS C. LIDDELL, KEVIN D. LYNCH, El Paso; WILLIAM C. WRIGHT, Farmersville; JAMES D. BOZEMAN, GILES A. DEASON, IVAN E. HIX, HOWARD D. MITCHELL, Fort Worth; HARRY P. HARBER, Galveston; EDWARD C. BLACKWELL, German; CLARENCE S. MURPHY, Groveton; CHARLES C. CLEVELAND, Hamilton; HENRY U. WOOLSEY, Hillsboro; CARL B. YOUNG, JR., Houston; CHARLIE C. PARKS, Lancaster; DON PAUL JONES, Leckney; ST. JULIAN R. MURCHISON, Marshall; PERE M. KUYKENDALL, Moody; COLEMAN J. CARTER, Oakwoods; LOUIS H. COCKERHAM, Palestine; ROGER ATKINSON, Pleasanton; GEORGE E. GLOVER, Refugio; WILLIAM A. CHERNOSKY, Rosebud; HOWARD M. BUSH, GEORGE A. MUELLER, OLIVER H. TIMMINS, San Antonio; IVY STANSELL, Sanderson; THOMAS R. BEECH, Slaton; TILGHMAN O. DARBY, Sour Lake; JOHN F. CRAWFORD, Tolar; WILMER A. HADLEY, Webster; THOMAS W. HEDRICK, Wheelock; HARRY H. BROWN, JR., Yoakum.

To Fort Riley, for instruction, Lieuts. ROBERT S. SUTTEN, Bartlett; GEORGE W. HOWARD, Dallas; SIMEON H. NEWMAN, El Paso; ROSCOE ETTER, Hubbard; JOSEPH E. McDOWELL, Shamrock; JAMIE D. STEPHENS, Temple; from Camp Cody, Lieut. ERNEST H. HAMILTON, Kilgore.

To New York City Orthopedic Hospital, from New York City, Lieut. QUINCY B. LEE, Wichita Falls.

To Oklahoma City, Okla., for instruction in orthopedic surgery, Capt. WILLIAM B. CARRELL, Dallas.

To St. Louis, Mo., Washington University, for instruction, Lieut. DEWITT SMITH, Dallas.

Vermont

To Fort Oglethorpe, for instruction, Lieut. JOSEPH A. CIMINERA, Burlington.

To Fort Riley, from Evacuation Hospital No. 7, Fort Riley, Capt. HENRY C. JACKSON, Woodstock.

To New York City, Base Hospital No. 116, from Fort Ethan Allen, Lieut. ROBERT I. MAYNARD, Burlington.

Virginia

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. STANLEY H. GRAVES, Norfolk.

To Camp Lee, Petersburg, Va., base hospital, from Fort Oglethorpe, Capt. JAMES H. SMITH; Lieut. GREER BAUGHMAN, Richmond.

To Camp Mills, Garden City, L. I., for duty, from Camp Mills, Lieut. FRANK H. REDWOOD, Richmond.

To Camp Wadsworth, Spartansburg, S. C., base hospital, from Richmond, Lieut. LEVIN P. MAGRUDER, Richmond.

To Fort McPherson, Ga., for duty, Lieut. CLAUDE D. KELLAM, Norfolk.

Washington

To Camp Lewis, American Lake, Wash., base hospital, from Camp Lewis, Capt. WILLIAM G. CASSELS, Seattle; to examine the command for mental and nervous diseases, Capt. ALBERT C. STEWART, Fort Steilacoom.

To Fort Mason, Calif., Base Hospital No. 30, from San Francisco, Capt. NATHAN P. WOOD, Seattle.

To Fort Riley, for instruction, Capts. FRANK L. WOOD, Lyden; JAMES G. MATTHEWS, Spokane; Lieuts. GEORGE I. HURLEY, Hoquiam; KENNETH J. HOLTZ, Renton; GEORGE W. OVERMEYER, Seattle; WARREN J. HOUGH, Tacoma.

To report by telegraph to the Commanding General, Western Dept., for assignment to duty, Lieut. IRVING M. LUPTON, Spokane.

West Virginia

To Fort Oglethorpe, for instruction, Lieuts. WILBUR F. SHIRKEY, JR., Charleston; CHARLES L. RUGGLES, Wellsburg.

To New York City, Base Hospital No. 116, for duty, from Pittsburgh, Lieut. LOWELL S. GOIN, Wheeling; for instruction in orthopedic surgery, from Louisville, Lieut. ALVAH L. PARSONS, Charleston.

To Walter Reed General Hospital, Takoma Park, D. C., for instruction in tuberculosis examinations, Capt. ALBERT L. GRUBB, Berkeley Springs.

Wisconsin

To Fort Riley, for instruction, Capt. GEORGE H. LAWRENCE, Fond du Lac; Lieuts. WILLIAM N. MOORE, Appleton; FRANK H. KENNEDY, Greenwood; JAMES H. FOWLER, Lancaster; JOHN J. WILKINSEN, Milwaukee; EDWARD W. HANSON, Three Lakes.

To Philadelphia, Pa., for instruction in orthopedic surgery, Lieut. MERRITT LAC. JONES, Wausau.

To St. Louis, Mo., Washington University, for instruction in urology and dermatology, from Camp Pike, Lieut. CHARLES B. RYDELL, Superior.

Wyoming

To Fort Riley, for instruction, Lieut. ROBERT H. SANDERS, Kemmerer.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

New Officers.—At the annual meeting of the Tehama County Medical Society at Red Bluff, Dr. Frank J. Bailey was elected president; Dr. Walter Gavey, vice president, and Dr. Frank L. Doane, secretary-treasurer, all of Red Bluff.

Personal.—Dr. Melvin L. Moore, Los Angeles, who has been ill at his home for several days, is convalescent.——Dr. Clelia D. Mosher, medical adviser of women at Leland Stanford University, Palo Alto, has started for France to engage in welfare work for the Red Cross.——Dr. Edith E. Johnson, Palo Alto, has succeeded Dr. Mosher as medical adviser to students.——Dr. George A. White, Sacramento, who has been ill for several weeks, is now reported to be convalescent.——Dr. Rexwald Brown, Santa Barbara, is reported to be in a critical condition at Johns Hopkins Hospital, Baltimore.

Popular Medical Lectures.—A course of popular medical lectures will be given at the Stanford University Medical School, during January, February and March. The schedule of these lectures is as follows:

January 4: "The Control of Vice Diseases Among Troops Through Civil and Military Cooperation," Colonel Louis M. Maus, U. S. Army.
January 18: "Surgery of the Present War," Dr. Leo Eloesser.
February 1: "Industrial Fatigue," Prof. E. G. Martin.
February 15: "Food Poisoning from Canned Goods," Dr. Ernest C. Dickson.
March 1: "Recent Experiences of a Medical Man in the War Zone," Dr. William P. Lucas, Professor of Pediatrics, University of California.
March 15: "Circulation of the Blood," illustrated with moving pictures, Dr. Arnold A. D'Ancona.

CONNECTICUT

Personal.—Dr. Frederick C. Goldstein has succeeded Dr. Louis H. Wilmot as city health officer of Ansonia.——Dr. Seymour L. Spier, police surgeon of New Haven, who was operated on, November 30, is reported to be convalescent.

Medical Milk Commission Formed.—At the November meeting of the Bridgeport Medical Association, a medical milk commission was appointed, consisting of Dr. Charles N. Haskell, chairman, Dr. Walter Brown, Dr. Fessenden L. Day, C. E. Calvin and J. H. Bowdry. This commission will cooperate with the department of health in the supervision of certified milk to be sold in the state.

State Health Association Organized.—At a meeting of health officers and other men in Hartford, December 6, the Connecticut Public Health Association was organized, and the following officers were elected: president, Dr. Stephen J. Maher, New Haven, chairman of the state tuberculosis commission; vice president, Dr. Charles J. Bartlett, state bacteriology; secretary, Dr. Charles P. Botsford, Hartford, and treasurer, James A. Maher, Bridgeport. It was decided to organize subsidiary committees in each county of the state.

ILLINOIS

Smallpox.—There are said to be forty cases of smallpox in Hanover, Jo Daviess County, and the disease has also appeared in Elizabeth and Galena. The state board of health has the situation in hand.

Tuberculosis in Chicago.—As a result of the first accurate tuberculosis survey made in Chicago, Health Commissioner Robertson reports that there are between 60,000 and 70,000 cases of tuberculosis in the city.

Antitoxin Supply Cut Off.—Health Commissioner Robertson has received notice from the state health department to cut off the supply of diphtheria antitoxin on account of the appropriation for this purpose having been expended.

Personal.—Dr. Clara E. Hayes of the medical staff of the Peoria State Hospital has been appointed superintendent of the State Training School for Girls, Geneva.——Dr. Herman M. Adler, Chicago, criminologist of the state department of public welfare, is head of the Voluntary Mental Hygiene Consulting Commission, which was opened, December 17, at the Cook County Psychiatric Hospital.——Major Richard J. McDonnell, Chicago, has resigned as medical adviser of the One Hundred and Eighth Engineers.——Major Eugene G. Clancy, Chicago, has been made director of field hospitals of the division.

Voluntary Medical Units Ready.—A medical unit and an ambulance unit have been mustered into the state service. The first unit of the Medical Corps is headed by Major Charles E. Boynton, and consists of Capts. E. Stillman Bailey, and Hugh R. Scofield, and Lieuts. Adrian R. Karreman, Ralph R. Holmes, John G. Campbell, James L. Smith and William J. Timmer. The ambulance company is commanded by Capt. C. M. Price, and is assisted by Lieuts. Guy E. Beard, W. S. Hubbard and R. I. Humphrey. The ambulance unit was enlisted from the employees of the McCormick plant of the International Harvester Company, which donated the ambulance and equipment to the organization.

KENTUCKY

Social Service Exchange.—A social service exchange has been established by which there will be a coordination of the charitable agencies of Louisville cooperating. A large proportion of these agencies have already affiliated with the exchange. This exchange will prevent duplication of effort, facilitate relief and promote efficiency. The expenses will be borne by the Federation of Social Agencies.

New Appointments.—The following appointments have been made by the Board of Public Safety of Louisville: Dr. J. N. Sebastian, city physician, western district; Dr. W. W. Smith, sanitary inspector, eastern district; Dr. E. L. Whedbee, negro, sanitary inspector to look after the indigent negroes. Drs. Florence Brandeis and Annie Veech, medical inspectors of schools; Dr. L. A. Crutcher, sanitary inspector, western district.

LOUISIANA

Appointed to Sanitary Corps.—John Henry O'Neal, sanitary engineer for the state board of health, has gone into the Sanitary Corps and has already entered the service. He has been granted leave of absence from his duties on the state board of health during the continuance of the war.

New Society Meets.—At the annual meeting of the Orleans Parish Medical Society, held in New Orleans, December 9, a service flag was raised, the central star of which was in honor of Rudolph Matas, M. R. C., U. S. Army. The following officers were elected: president, Dr. Paul J. Gelpi, Jr.; vice presidents, Drs. Frank J. Chalaron, Hector E. Bernadas and Everard W. Mahler; secretary, Dr. Paul T. Talbot, and treasurer, Dr. Henry W. E. Walther.

Medical Examiners in Session.—The State Board of Medical Examiners concluded its session, December 1. In the reorganization of the board, Dr. Leon J. Menville, Houma, succeeds Dr. John G. Martin, Lake Charles, as president, Dr. Thomas E. Wright, Monroe, succeeds Dr. Stuart L. White, Ruston, as vice president, and Dr. Edmund D. Martin, New Orleans, was elected secretary, succeeding Dr. James A. Henderson, who is in the military service.

MARYLAND

Personal.—Dr. Lewis A. Griffiths of Upper Marlboro has been appointed by the President to be inspector of explosives for the state of Maryland. Dr. Griffiths has been a member of the state board of medical examiners for the past fourteen years and has also served on the state board of health.——Capt. Clarence B. Farrar of the Canadian Army Medical Corps, a former Baltimorean, who has been for the past two years in charge of a large hospital at Coburg for returned Canadian soldiers who have suffered from shell shock and various types of mental disorders as a result of the war, spoke at a special medical meeting in Osler Hall, Baltimore, on December 14.

MISSOURI

Honors Paid Dead Officer.—Memorial services were held at Kansas City recently in honor of Lieut. William E. T. Fitzsimmons, M. R. C., U. S. Army, Kansas City, the first American medical officer to be killed in France. The meeting was attended by the consuls of all the allied nations.

Personal.—Dr. J. Adolph Gandy, Valley Park, St. Louis County, while crossing the Frisco tracks, November 24, was struck by a train and seriously injured.——Dr. James C. Welch, Jefferson City, formerly physician at the State Penitentiary, who had been charged with bribery, was acquitted, November 24.——Dr. Robert F. Hyland, St. Louis, is under treatment at St. John's Hospital, St. Louis, on account of injuries received in a collision between his automobile and a motor truck recently.

NEW YORK

Grenfell in Rochester.—Dr. Wilfred T. Grenfell, Labrador, gave a lecture under the auspices of the Commonweal Club, Rochester, December 8.

New Officers for Academy.—At the annual meeting of the Elmira Academy of Medicine, December 5, Elliot E. Bush, Elmira, was elected president; Dr. Oscar J. Bowman, Horseheads, vice president; Dr. J. Lee Kinner, Elmira, secretary, and Dr. Abraham Lande, Elmira, treasurer.

New York City

New Hospitals Incorporated.—At a special meeting of the State Board of Charities, December 12, the applications for incorporation of the Carson C. Peck Memorial Hospital, Brooklyn, and the Mercy Hospital, at Cazenovia Park, Buffalo, were approved. A dispensary license was granted to the Greenpoint Hospital, Brooklyn, of the Department of Public Charities. Action on the application for the incorporation of the Hebrew Convalescent Home at 235 West One Hundred and Twentieth Street and for the institution planned by the Committee for the Care of Jewish Tuberculous was deferred.

Pediatricians Plan to Solve War Problem.—At the stated meeting of the Section on Pediatrics of the New York Academy of Medicine, December 13, the subject of malnutrition in schoolchildren was discussed. Dr. Henry Dwight Chapin, New York, read a paper entitled, "The National Danger from the Defective Development of Growing Children in Time of War," in which he presented statistics showing that malnutrition is greatly op the increase among the schoolchildren of New York. His conclusion was that there are 120,000 children suffering from malnutrition, or on the borderline, in the public and parochial schools of the city. A motion was carried providing for the appointment of a committee of pediatricians to investigate existing conditions in reference to malnutrition, to act in an advisory capacity in cooperation with other relief agencies working along similar lines, and to keep a record furnishing information as to what service the individual members of the section were prepared to contribute to the solution of this problem. The endeavor will be made to work out a plan of relief that may serve as a standard for other cities.

OHIO

Communicable Diseases.—Smallpox is reported to be epidemic in the village of Monroe and several outlying sections of Middletown, where about thirty cases have been reported. ——Schools, churches and lodge halls of Malinta have been closed on account of an epidemic of scarlet fever.——The smallpox epidemic at Tarlton is reported to be well under control.

Councillor District Meeting.—The annual meeting of the First Councillor District Medical Society was held in Cincinnati, December 5, under the presidency of Dr. William Kelley Hale, Wilmington. Dr. Francis M. Fitton, Hamilton, was elected president, and Dr. Eric R. T. Wachtman, Cincinnati, secretary-treasurer. The afternoon session was held in the newly completed medical school building of the University of Cincinnati.

Hospital Notes.—The state department of health has recommended that a tuberculosis hospital be established for Crawford, Wyandot, Seneca, Hancock and Wood counties. During 1916, 168 deaths were said to have occurred in this district from tuberculosis.——A conference was held in Columbus, December 6, between orthopedists of the state and the hospital commission regarding the policies to be adopted in the proposed State Hospital for Crippled Children in which they agreed that the hospital should start with a limited number of patients, that its service should be broadened slowly, and that patients after operation should be retained at the hospital for education to fit them for useful work thereafter.

Personal.—Dr. Edward J. Schwartz, for fifteen years health officer of Salem, has resigned to accept a position as director of communicable diseases in the state department of health. ——Dr. Julius H. Jacobson has resigned from the staff and board of St. Vincent's Hospital, Toledo.——Dr. Gertrude H. Transeau has passed an examination for assistant epidemiologist in the state department of health.——Dr. William H. Rabberman, Forest, froze both feet while answering a professional call, December 10.——Dr. William C. Marshall, district physician of Dayton, has resigned, and will locate in Selma.——Dr. Frank H. Williams, Portsmouth, has been appointed local surgeon of the Chesapeake and Ohio Railway, succeeding Dr. Orin W. Robe, Portsmouth, who has been called to the colors.——Dr. Rush R. Richison, Yellow Springs, has been appointed superintendent of the district tuberculosis hospital, Springfield.——Dr. Frank P. Corrigan, Cleveland, has started for his new post of duty in Chile, where he is in the employ of the Chilean Exploration Company.

Cincinnati

Public Health Officers Organize.—The Cincinnati Public Health Council was organized at the Cincinnati General Hospital, November 23, and health officer, Dr. John H. Landis, was elected temporary chairman.

Research Society Elects Officers.—At the annual meeting of the Cincinnati Research Society, Dr. Jacob L. Tuechter was elected president; Dr. Meyer L. Heidingsfeld, Cincinnati, vice president, and Dr. Raphael Isaacs, secretary.

Physicians Appoint Fund Trustees.—Dr. John H. Landis, president of the Cincinnati Academy of Medicine, November 12, appointed Drs. William D. Porter, Benjamin K. Rachford, J. Ambrose Johnston, Frank W. Langdon and John W. Murphy, trustees of the $5,000 which was subscribed recently for the benefit of Cincinnati physicians in the military service.

Personal.—Dr. Charles A. L. Reed, who has been seriously ill in Atlantic City with hemiplegia consequent on an infectious thrombosis, is reported able to be up and around. ——Dr. Oliver P. Holt has resigned as a member of the medical staff of the General Hospital.——Dr. Arthur C. Bachmeyer, superintendent of the Cincinnati General Hospital, has requested that his salary be reduced from $4,500 to $2,100 a year during the period of the war, as he is also in active service as a captain in the Medical Reserve Corps.

OKLAHOMA

Personal.—Dr. Francis B. Fite, Muskogee, has been appointed a member of the State Board of Education, to succeed himself.

Smallpox at Lawton.—The conditions at Lawton regarding smallpox and other communicable diseases are so acute that the chief surgeon of Camp Doniphan has sent a letter to the governor of the state asking him to immediately take steps to have Lawton quarantined from the state. The governor thereupon assigned state health officer Dr. J. W. Duke, Guthrie, and his assistant, Dr. Herbert V. L. Sapper, Oklahoma City, to go to Lawton and make a preliminary survey of the situation.

OREGON

Detention Home for Women.—Kelly Butte, the subjail, is to be made the detention quarters and hospital for women found to be suffering from venereal disease. The committee has recommended to the county commissioners that the hospitals be put in condition immediately for the detention and treatment of these women. The cost for the next six months is estimated at $10,000.

Personal.—Dr. William M. Campbell, Portland, has been commissioned major and chief surgeon of the Oregon National Guard.——Dr. Esther C. P. Lovejoy, Portland, who is at present serving in France, is reported to have been commissioned first lieutenant by the French government.——Dr. Earl Smith, Portland, has been appointed coroner of Multnomah County, succeeding Dr. Ferdinand H. Dammasch, resigned to enter the military service.

PENNSYLVANIA

Anniversary of Academy.—The twenty-second anniversary of the founding of the Harrisburg Academy of Medicine was celebrated, December 7, at the academy in connection with the Dauphin County Medical Society. The address of the evening was delivered by Major Charles A. E. Codman, Philadelphia, M. R. C., U. S. Army.

Personal.—Dr. Rollen L. Shinaberry, Scranton, was shot and seriously wounded, December 10, by a man believed to be of unsound mind.——Capt. Lauren C. Thomas, M. R. C., Latrobe, has been given an honorable discharge from the service on account of ill health.——Dr. John W. Luther, Palmerton, is reported to be seriously ill.——The house of Dr. James R. Gormley, Dutch Ridge, near Beaver, was destroyed by fire, December 5, and Dr. Gormley narrowly escaped death.

Philadelphia

Babies' Hospital Campaign.—December 11, a whirlwind campaign to raise $175,000 for the Babies' Hospital began, and, December 15, had totaled $92,520. On the fourth day of the crusade, the teams turned in $20,190.

Heroin Seized.—With an arrest in a house at Green and Sixteenth streets recently, 40 ounces of pure heroin were seized, the largest single seizure of narcotics ever made in this city. The man arrested is under $10,000 bail.

Dinner to Women Doctors.—The board of corporators and the faculty of the Woman's Medical College of Pennsylvania gave a dinner, December 7, in honor of three alumnae of the college who are about to sail for France. These are Drs. Marie K. Formad, Marry Getty and Laura Hunt.

Personal.—Dr. Elizabeth M. Moyer, Baltimore, addressed the Medical Society of the Women's Hospital of Philadelphia, December 17, on "Radium Therapy."——Dr. Bernard Kohn has been appointed temporary director of school medical instructors to fill that position during the absence of Dr. Walter S. Cornell, now major in the Medical Reserve Corps.

WISCONSIN

Physicians Appeal.—An appeal was filed in the circuit court, November 28, in the case of Drs. Frederick C. Gessner, William F. Becker, Herbert W. Powers and William F. Wegge, who had sued Milwaukee County for $275 each for expert witness fees. The appellants testified in an insanity case, and claimed fees of $50 a day each, but the county board estimated the value of their services at $4 a day.

Hospital Notes.—The health committee of the Milwaukee Society of National Defense has adopted resolutions urging the governor to include in the call for a special session of the legislature a bill permitting the merging of the Emergency and County hospitals.——In the campaign to raise $500,000 for the new Columbia Hospital, Milwaukee, more than half the desired amount has already been secured.——Dane County Anti-Tuberculosis Sanatorium, largely a gift from Dr. Charles H. Vilas, Madison, a member of the board of regents of the University of Wisconsin, was opened for patients, December 1. About $30,000 has been expended in this work, and the sanatorium consists of an administration and an infirmary building and two cottages, furnishing accommodation for thirty patients.——The Tri-County Tuberculosis Sanitarium for Ashland, Bayfield and Iron counties is now an assured fact, as they county board of Bayfield County has authorized an appropriation of $30,000, and the Iron County board one of $20,000 for the same purpose.

Personal.—Dr. George C. Ruhland, Milwaukee, health commissioner, who relinquished his office to accept army service, and who has been on duty at Fort Sill, Okla., has been honorably discharged, and will resume his duties, January 1. Dr. Lewis J. Daniels, health commissioner ad interim, relinquished the position as by previous agreement.——Lieut. Ladislaus Louis Adamkievicz, assistant surgeon, U. S. Navy, Milwaukee, was rescued when the United States destroyer *Jacob Jones* was sunk by a submarine.——Dr. Thaddeus D. Smith, Neenah, who was wounded in an air raid over an American base hospital in France a short time ago, is returning to America, invalided.——Dr. Peter J. Christofferson, Waupaca, was seriously injured by the overturning of his automobile, December 4.——The house of Dr. James Hittner, Seymour, was destroyed by fire, November 19, at a loss of $12,000, little more than half of which was covered by insurance.——Dr. Gilbert E. Seaman, Milwaukee, has been made chief surgeon of the Thirty-Second Division at Camp McArthur, Waco, Texas.

CANADA

Relief for the Blind.—According to Sir Frederick Fraser, superintendent of the School for the Blind, Halifax, N. S., a committee for relief work among those blinded in the recent disaster in that city has commenced. The situation is appalling, as there have been more than 210 persons blinded through the terrible explosion.

Hospital News.—Lieut.-Col. P. W. H. McKeown, Toronto, O. C. Kitchener Hospital, Brighton, England, has applied for six months' leave of absence, and will visit Ireland.—— The board of consultants of the Canadian Hospitals Military Commission is inspecting the military hospitals in Toronto and vicinity. They were accompanied on their tour of inspection by Lieut.-Col. E. Stanley Ryerson, A. D. M. S., Toronto. ——The organization of the new Canadian special hospitals in England is authorized as follows: Westcliffe Eye and Ear Hospital, Folkstone, 400 beds; King's Canadian Red Cross Hospital, Bursley Park, 300 beds; affiliated hospital, Clarence House, Roehampton, 106 beds.——From London, December 14, it is announced that Major Philip Burnett, Montreal, is appointed to command the Red Cross Hospital at Buxton, replacing Col. Frederick Guest, St. Thomas, Ont. Major Lewis R. Murray, Sussex, N. B., is to command Uxbridge Convalescent Hospital, replacing Lieut.-Col. William Webster, Winnipeg, Manit., who assumes command at Bramshott, replacing Major Henry E. Kendall, Halifax, N. S. Major Gilbert B. Peat, Andover, N. B., is to command the Patricia Hospital at Ramsgate, replacing Lieut.-Col. Alexander J. Mackenzie, Toronto, Ont., who assumes charge of the medical section at Ramsgate. Capt. J. Adrien Grenier, St. Tite, Que., is gazetted flying officer.

GENERAL

Urges Efficient Medical Education for Negroes.—At its annual meeting, held in Memphis, November 15, the Southern Medical Association adopted several preambles and a resolution pointing to the necessity of perpetuating and making more efficient negro medical education in the United States.

Rockefeller Foundation Budget.—The Rockefeller Foundation budget for war relief expenditures in 1918 will total $5,050,000, with a possible addition of $5,000,000. This budget was approved by the trustees, December 11. The proposed expenditure includes $3,345,000 for the work of the International Relief Board, $424,000 of which is for the use of the tuberculosis commission in France.

Fenger Memorial Fund.—The directors of the Fenger Memorial Fund announce that the sum of $500 has been set aside for medical investigation, the money to be used to pay a worker, the work to be done under direction in an established institution, which will furnish the necessary facilities and supplies free. It is desirable that the work should have a direct clinical bearing. Applications with full particulars should be addressed to Ludvig Hektoen, 637 South Wood Street, Chicago, before Jan. 15, 1918.

Seaboard Railway Surgeons Meet.—The twenty-second annual meeting of the Seaboard Medical Association of Virginia and North Carolina was held at Norfolk, Va., December 4-6, under the presidency of Dr. Kirkland Ruffin, Norfolk, Va. Kinston, N. C., was chosen as the next place of meeting, and the following officers were elected: president, Dr. Ira M. Hardy, Kinston, N. C.; vice presidents, Drs. William L. Harris, Norfolk, Va.; Henry W. Carter, Washington, N. C., and Philip St. L. Moncure, Norfolk, Va.; secretary, Dr. Clarence Porter Jones, Newport News, Va., and treasurer, Dr. George A. Caton, Newbern, N. C.

Correction.—In the discussion by Dr. Alfonso G. Castelli, New York, on the paper by Drs. Lewellys F. Barker and Thomas P. Sprunt, Baltimore, which appeared in THE JOURNAL, December 8, p. 1926, it is stated:

"We may start with 0.1 gm. of iron arsenate in 1 c.c. of solution, to be administered every day, children and undersized patients accordingly, and the dose may be increased up to 0.7 gm."

This should be:

"We may start with 0.01 gm. (1 centigram) of iron arsenate in 1 c.c. of solution, to be administered every day, children and undersized patients accordingly, and the dose may be increased up to 0.07 gm. (7 centigrams)."

Bequests and Donations.—The following bequests and donations have recently been announced:

The ambulance company of Major John A. Hawkins, stationed at Allentown, Pa., a donation of more than $4,000, raised by the Automobile Club of Pittsburgh and the Allegheny County Medical Society.

Alumni Association of Jefferson Medical College, a bequest of $10,000, by the will of Dr. Joseph M. Malatesta.

New York Post-Graduate Medical School and Hospital, $5,000, by the will of Cora V. R. Catlin.

Hahnemann and St. Luke's hospitals, Philadelphia, each $30,000, by the will of William H. Keim.

Michael Reese Hospital, to found two rooms in memory of his two daughters, in the Chicago Jewish Orphan Asylum, $1,000, and Chicago Home for Aged Jews, $1,000, by the will of Simon Florsheim.

Philadelphia Home for Incurables, $1,000, and Home of the Merciful Saviour for Crippled Children, $300, by the will of Mary D. Day.

American Red Cross Commission, a donation of $250,000 for Italian wounded and needy refugees, by William K. Vanderbilt.

Presbyterian Hospital, Chicago, $10,000, by the will of Mrs. Mary R. Harris.

Chief of Bureau of Animal Industry Dies.—Alonzo Dorus Melvin, aged 55, chief of the Bureau of Animal Industry, Department of Agriculture, Washington, D. C., and the foremost figure of the government in combating foot-and-mouth disease and other diseases of cattle, died suddenly at his home in Washington, December 7, after a hemorrhage of the lungs. He was a native of Illinois, and a graduate in veterinary medicine from the Chicago Veterinary College in 1886. He at once entered the service in the United States Department of Agriculture, and transferred to Baltimore a year later. In 1890, he was sent to Liverpool to inspect animals and vessels from the United States, and two years later was placed in charge of the meat inspection in Chicago. He was made

chief of the inspection division in 1895, and chief of the bureau, Dec. 1, 1905. Dr. Melvin was a member of the advisory board of the Hygienic Laboratory, U. S. P. H. S., was the president of the American Veterinary Association in 1909, and was an honorary associate of the Royal College of Veterinary Surgeons, London.

Once More a Warning.—Last week attention was called to a subscription swindle now being worked among physicians similar to a method worked at various times during the last few years. The individual presents himself as a contestant for a prize in the form of a scholarship to be awarded by an educational association to the one obtaining the most subscriptions during a certain period of time. It is worked under different names. We have called attention to it as the National Educational Association, the Cornell Educational Association, The United Students' Aid Society, and last week as the Advance Society of the University of Illinois. The latest form, the University Progressive Club of Cincinnati, is herewith reproduced.

E. H. Compton, Pres. Wallace Lane, Secy. and Treas.

University Progressive Club
University of Ohio
CINCINNATI, OHIO

$ 8.50 ..... 10 ..... 11 1917

We hereby certify that A. R. .....

has paid to this Club Eight 50/100 ..... Dollars

in payment of 1 year's subscription to the following periodicals, etc.

1 ..... to begin at the Exp

2 ..... to begin of pres sub

3 ..... to begin .....

4 ..... to begin .....

Please note that signature of contestant on this receipt corresponds to that of contestant or credentials.

UNIVERSITY PROGRESSIVE CLUB.

E. J. Rogers.

Receipt No. 115 Contestant No. 14.

Form used by subscription swindlers. (*See item, "Once More a Warning."*)

Physicians should be on the watch for these swindlers, and should not pay money to agents whom they do not personally know.

LONDON LETTER

London, Nov. 20, 1917.

The War

DECREASE OF INSANITY

It is a curious fact, for which several explanations may be suggested, that during the war the number of the insane has decreased year by year. According to the returns for 1916, which have just been published, the number under care in England and Wales was 134,029, Jan. 1, 1917, as compared with 140,466, Jan. 1, 1915—a fall of 3,159 during the year 1916. If the average annual increase during the ten years previous to 1915 had been maintained, the number would have been 144,968—nearly 10,000 in excess of the number recorded. The relative sex percentages under care in 1916 were: males, 45.7, females, 54.3, against 46.2 and 53.8, respectively, in 1914. There were nearly 2,000 mental and nervous patients in the military hospitals, some of whom probably will eventually be certified as insane. This partly accounts for the disparity in the two sexes. Of the male attendants in the lunatic asylums, more than 50 per cent. have joined the army.

GERMAN HONORS RENOUNCED BY BRITISH SCIENTISTS

A note on membership of German academies and scientific societies has been circulated among the fellows of the Royal Society over the signatures of the following professors: Dr. W. M. Bayliss (physiology, University College, London); Sir James Dewar (experimental philosophy at Cambridge); Sir David Ferrier (neuropathology, King's College, London); Dr. J. N. Langley (physiology, Cambridge); Sir W. H. Perkin (chemistry, Oxford); Sir Ronald Ross (tropical sanitation, Liverpool University); Dr. C. S. Sherrington (physiology, Oxford); Dr. E. H. Starling (physiology, University College, London):

"The declaration of war by Germany against Russia and France was received with enthusiasm by practically every section of the German nation. The professors, who form the backbone of the German scientific academies and societies, were prominent as a whole in arousing this enthusiasm. It is largely due to them that a belief was created in German minds that Germany was superior to other nations, and that in consequence it was only just and right that German power over other nations should be extended. No German scientific academy or society has, so far as we know, issued any protest against the many infringements of humanity and of international law which have been characteristic of the German conduct of the war. The members of the Royal Society doubtless reprobate the action of the German government in bringing on the war, and its methods of conducting it, as much as any other section of British folk. It seems, therefore, incongruous that fellows of the society should continue to announce in the year-book of the society, in "Who's Who," or elsewhere, their membership of German academies and scientific societies as an honor which they value. It seems more consistent with the actual state of affairs that such mention should be omitted. Some fellows of the society have, we understand, already adopted this course with a view to bringing home to German scientific men that learning and research cannot be divorced from public conduct. Others with whom we have spoken intend to do so. Our occupations have prevented us from obtaining the opinions of the fellows generally, but as we believe that there is a widespread desire for common action, we venture to call attention to the matter. We intend to omit mention of German academies and societies."

A SPECIALIZED MEDICAL SERVICE FOR THE AIR FORCE

The establishment of the air force as an independent service instead of a branch of the army or navy, as it has been up to the present, is now arranged. Among the changes introduced is a specialized medical service. Flying men are subject to many peculiar physical disabilities, and research into the methods of prevention and cure has advanced very rapidly. So long, however, as the flying services remained merely as appendages of the army and navy, it was difficult to provide for their study and for the special treatment of the patient. Knowledge on the subject is limited almost entirely to those few medical officers and physicians who have had considerable numbers of flying men continuously under their care. It is necessary at once to take special measures to provide separate accommodation for the patients and a separate staff to concentrate on the problems that have arisen. The mere selection of candidates for the flying services has become a highly specialized business, and the standard of fitness required for flying is diverging from the standard required for the ordinary naval and military services. There are many minor physical imperfections which render a man unfit for flying, but which if treated early may be remedied. Still more important, many precautions have to be taken to enable pilots to maintain their fitness under the severe conditions of modern air warfare.

PARIS LETTER

Paris, Nov. 22, 1917.

The War

CHILLING OF THE FEET AS PREDISPOSING TO TETANUS

At a recent meeting of the Académie de médecine, Dr. H. Vincent, professor at the Val-de-Grâce Military Medical School, discussed the subject of tetanus provoked by frosting of the feet of the combatants. Vincent's experimental research has shown that if one injects the leg of a guinea-pig with tetanus bacillus spores, without the toxin, and then subjects the leg to cold and wet by means of continuous irrigation with water for two hours or more, tetanus develops, often acute or splanchnic. These experiments fulfil the etiologic

conditions identical with those causing frosting of the feet in soldiers. Dry cold does not have the same effect. It is the prolonged maceration resulting from standing in the water in the trenches for many hours which is responsible for the chilling of the feet, the edema and the trophic disturbances. The tetanus bacillus spores get into the abrasions on the feet. Cold (15 C.—59 F., or below) annuls the phagocytic power of the leukocytes against the spores. The bacilli find a fertile culture medium in the edematous fluids as the tissues are warmed up, and the ultimate adsorption of this culture medium is equivalent to an injection of tetanus toxin. The symptoms of acute tetanus supervene in spite of prophylactic injections of antitetanus serum, no matter how potent it may be. The underlying tissues remain edematous for some days. The constriction caused by the leggings, which shrink under the influence of the imbibition of the water, favors the continuance of the edema, and hence the production of tetanus. It would be expedient, circumstances permitting, to empty the trenches of water, to loosen the puttee straps or use impermeable cloth leggings. Among the individual measures to be recommended, the most important is to wear large shoes, carefully greased or oiled, and woolen socks impregnated with grease containing some formaldehyd. The soldier should, whenever possible, remove his shoes for an hour or two, rub and dry his feet, and anoint them with some fatty substance. Men presenting the first symptoms of freezing, pains, etc., should be sent to a warm place near by where they can be treated by rubbing with alcohol.

RENOVATION OF COTTON COMING FROM MILITARY HOSPITALS

The Service de Santé (army medical department) uses enormous quantities of cotton. Paris alone uses at least 2,000 kg. a day. M. R. Villey, a chemist, has proposed to treat this soiled cotton so that it can be used again. The manipulation and transport of the cotton favors the dissemination of pyogenic organisms; hence certain precautions must be taken, notably to place at the disposition of the hospitals metal boxes that can be hermetically closed. The method of procedure is as follows: The hospitals sort out the cotton that is not too much soiled. The cotton which is wholly unfitted for further use is burned. The remaining cotton is conveyed, at regular intervals, to a designated place in town and from there to the sterilizing station, where it is subjected to a chemical treatment and transformed into absorbent cotton. It is important to free the cotton of all fatty substances which envelop the fibers like a greasy insulating sheath. To accomplish this result, the cotton is boiled for ten or twelve hours in soda lye, or, preferably, the cotton is autoclaved under pressure for about three hours, the steam containing a carbonate of soda lye. The cotton, freed of its fat sheath, is taken out of the autoclave, and is well washed in a tub provided with a strong paddle. It is then dried in a special turbine, which revolves very rapidly so as to remove all the moisture from the cotton. The product, well washed and dried, is placed in a calcium hypochlorite decolorizing bath, which bleaches the cotton to an immaculate whiteness. It is next washed thoroughly in water until free from the hypochlorite. After another drying, the cotton is carded, packed, and again autoclaved to insure perfect sterilization. As yet, only one sterilizing station has been equipped. It is situated at Montferrand, in the province near the Swiss border. About 20,000 kg. are treated daily. The soiled cotton is received from the central expediting hospital. The treated cotton is resold to the state at 1 franc 50 centimes (30 cents) per kilogram. In view of the fact that the price paid for cotton from America is 3 francs (60 cents) a kilogram or more, the saving to France amounts to more than 5,000,000 francs ($1,000,000) a year. Therefore it is contemplated to install sterilizing stations at Lyons, Mans, in the North, and in the Pyrenees.

Medical Instruction at the Front

In accord with the military authorities, M. Justin Godart, undersecretary of state for the military medical department, has organized, in the principal hospital centers in the army zones, courses for students of medicine, which will enable them to continue their studies and receive credits which may be presented for recognition later. The course is divided into two cycles, the first corresponding to the first and second years of the medical course, for which students will receive from two to eight credits. The second cycle corresponds practically to the third and fourth years of the medical course, and may be taken by students possessing nine to sixteen credits. The duration of each series is six months, three months being devoted to theory, with practical work, throughout the whole course in the center of instruction. The last course really is only three months' duration. Shortly, such courses will be given in each army, at the suggestion of the commander in chief himself, who desires to keep his younger medical officers as near at hand as possible. The courses are to be concluded by an examination held by the professors of each center and the civilian professors delegated by the various faculties. Failure postpones further work for six months, when the candidate is obliged to enter on a new course of study. The passing of the examination entitles the candidate to a diploma, which, at the close of hostilities, will be accepted as representing a certain number of credits, which entitle the candidate to cumulative credits.

Professional Training for Young Men with the Colors

The minister of public instruction has been impressed by the great danger to which the liberal professions are now exposed owing to the students and potential students being with the colors. It is to the best interests of the country that the professions be kept up under the most favorable conditions. Therefore, the minister has addressed a circular to the universities which authorizes them to register in the faculties and schools: (1) students who, following a war wound or disease contracted at the front, have been classified in the auxiliary service, and maintained in that position after thorough reexamination; (2) the reserve officers, serving with the fighting troops, who have been released from service, because of wounds or disease contracted at the front, and who are disqualified for further service; (3) the younger medical officers and pharmacists discharged for wounds or disease contracted at the front. These students will be permitted to register until December 1. When, by reason of their residence or of their service, it will be impossible for them to follow the regular course of study, they can ask for cumulative credits under the regular conditions. Thanks to this measure, they will be at liberty to resume their work as soon as their present situation will permit. The minister believes that this course of action is justified by the exceptional services they have rendered to the country, and that it is independent of the reparative measures that will be taken at the close of hostilities, and which will reestablish all possible equality between the young men who have pursued their normal course of study, and those who by the performance of their military duty have been temporarily diverted from their professional training.

Marriages

LIEUT. CHARLES SNOWDEN PANCOAST, M. C., Pa. N. G., Philadelphia, to Miss Minnie Loretta Percell of New York City, in Philadelphia, November 28.

LIEUT. GRANVILLE INMAN WALKER, M. R. C., U. S. Army, Savannah, Tenn., to Miss Katherine Welton of St. Paul, Ark., at Memphis, Tenn., December 2.

LIEUT. JOHN CHRISTIAN KNAPP, M. R. C., U. S. Army, to Miss Elizabeth Karsch, both of Philmont, N. Y., in New York City, November 12.

GEORGE ALVIN HUGHES, M.D., Cassopolis, Mich., to Mrs. Lenora Dennis of Edwardsburg, Mich., at Warsaw, Ind., November 29.

JEREMIAH ALEXANDER KLOTZ, M.D., Punxsutawney, Pa., to Miss Isabel Heimbach of Allentown, Pa., at Topton, Pa., November 22.

ASST. SURG. GEORGE OTIS CUMMINGS, U. S. Navy, Portland, Me., to Miss Sybil M. Kemp of Kingston, N. H., in Portland, November 25.

HARVEY ALEXANDER PRICE, M.D., Coquimbo, Chile, to Miss Marion Lenker of Mount Carmel, Pa., at Spring City, Pa., May 30.

LIEUT. WEBB WILLIAM WEEKS, M. R. C., U. S. Army, New York City, to Miss Ruth Thayer of Oklahoma City, December 2.

ROBERT VAL HOFFMAN, M.D., Detroit, to Miss Eleanor Robbins Presstman of Baltimore, November 22.

CHARLES P. WHITE, M.D., Wilmington, Del., to Miss Elizabeath B. Lobb of Philadelphia, November 28.

NEIL HERBERT BAILEY, M.D., to Miss Florence Gertrude Long, both of Hartford, Conn., November 29.

Deaths

Brig.-Gen. Bernard John Dowling Irwin, M. C., U. S. Army (retired); one of the most distinguished representatives of the Medical Department of the Army; aged 87; died at his country home, at Coburg, Ont., December 15. General Irwin was born in Ireland in 1830. He began the study of medicine in the Castleton (Vt.) Medical College in 1850, and later entered the New York Medical College from which he was graduated in 1852. After service as acting assistant surgeon, U. S. Army, for several months, he entered the Army as assistant surgeon, with the rank of lieutenant, and advanced through grades to Colonel and Assistant Surgeon-General, Aug. 28, 1890; was retired by operation of law, June 28, 1894, on attaining the age of 64, and was advanced to Brigadier-General (retired) by the act of April 23, 1904.

His service in the Army included numerous expeditions against the Indians, and he was awarded the Medal of Honor by Congress for "distinguished gallantry in action, Feb. 13-14, 1861." He was made medical director of the Army of Kentucky in 1862, and was captured in the battle of Richmond, Ky. After the close of the Civil War he served as post surgeon at a number of posts, chiefly in the West, and was attending surgeon, headquarters, Military Division of the Missouri, Chicago, from 1880 to 1882. He was in charge of the Army medical purveying depots in New York City and San Francisco until his promotion to colonel in 1890.

General Irwin devised the first field tent hospital for treatment of the wounded on the battlefield, at the time of the battle of Shiloh; its value was immediately recognized and it was promptly introduced into the military service, as the type of the most modern field hospital, and has since been adopted by the armies of all civilized nations.

Edward Augustus Ayers, M.D., Branchville, N. J.; New York University, New York City, 1880; aged 61; a Fellow of the New York Academy of Medicine, and a member of the Medical Society of the State of New York; emeritus professor of obstetrics in the New York Polyclinic; formerly a member of the New Jersey State Board of Health; founder and first president of the Mothers and Babies Hospital of New York; well known as a lecturer on scientific subjects; who won the Carpenter prize of the New York Academy of Medicine on "The Mosquito as a Sanitary Problem"; died in the Franklin (N. J.) Hospital, December 3, from pleuropneumonia.

Died in the Service

CAPT. AUGUSTIN DE Y. GREEN, M. R. C., U. S. ARMY, 1875-1917

(*See The Journal, last week, p. 2059*)

Ramon Guiteras, M.D., New York City; Harvard Medical School, 1883; aged 57; a Fellow of the American Medical Association; well known as a urologist; a member of the American Association of Genito-Urinary Surgeons, and American Urological Association; consulting surgeon to the French Hospital; visiting surgeon to the City and Columbus Hospital; professor of venereal and genito-urinary surgery in the New York Post-Graduate Medical School; well known internationally as a surgeon and big game hunter; died in the French Hospital, New York City, December 13, from meningitis.

William Allen Baker, M.D., Coloma, Mich.; Rush Medical College, 1882; a veteran of the Civil War; representative in the state legislature in 1887 and 1889; town supervisor; for several years justice of the peace, and for a number of terms president of the village of Coloma; promoter and builder of the railway from Coloma to Paw Paw Lake; builder and operator of the Coloma water works; died at his home, December 3.

George H. F. House, M.D., Indianapolis; Medical College of Indianapolis, 1879; aged 69; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; once vice president of the Marion County Medical Society; for one term president of the Indianapolis City Board of Health and Charities; died at the home of his daughter in Clayton, Ind., December 2, from cerebral hemorrhage.

Surg. Richard Bland Williams, Lieutenant Commander, U. S. Navy, Norfolk, Va.; University of Virginia, Charlottesville, 1898; aged 42; a Fellow of the American Medical Association; chief surgeon of the U. S. S. *Florida*; who entered the Navy, Nov. 17, 1900, as lieutenant, junior grade; while despondent on account of fear of losing his eyesight, is reported to have committed suicide in a hotel in Norfolk, December 5.

Edmund W. Meisenhelder, M.D., York, Pa.; Jefferson Medical College, 1868; aged 64; a Fellow of the American Medical Association, and a member of the staff of the York Hospital; a veteran of the Civil War; died suddenly from heart disease, while making a professional call, December 1. Tributes were paid to the memory of Dr. Meisenhelder at a meeting of the York County Medical Society, December 1.

Morris Norton Bemus, M.D., Jamestown, N. Y.; College of Physicians and Surgeons in the City of New York, 1889; aged 55; a Fellow of the American Medical Association, and of the New York Academy of Medicine; once president of the Medical Society of the State of New York, and of the Jamestown Medical Society; died at his home, December 9, from disease of the liver.

Mary Elizabeth Baldwin, M.D., Newport, R. I.; Women's Medical College of the New York Infirmary for Women and Children, 1874; aged 70; a Fellow of the American Medical Association; for twenty-five years secretary of the Newport Medical Society; died in a hospital in Brooklyn, from general toxemia following a nervous breakdown, November 21.

Edward Manning Brown, M.D., Springfield, Mass.; College of Physicians and Surgeons in the City of New York, 1898; aged 45; a member of the Massachusetts Medical Society and a specialist in dermatology and genito-urinary diseases; died in the Springfield Hospital, November 22, from meningitis consequent on an osteomyelitis of the skull.

Surg. Henry Albert Dunn, Lieutenant Commander, U. S. Navy, Philadelphia; George Washington University, Washington, D. C., 1897; aged 43; a Fellow of the American Medical Association; who was appointed an assistant surgeon and ensign in the Navy, June 7, 1900; died in a hotel in New York City, December 13, from heart disease.

Alice Byran Condict, M.D., Orange, N. J.; Chicago Homeopathic Medical College, 1883; Tufts College Medical School, Boston, 1906; aged 73; a Fellow of the American Medical Association; for more than a quarter of a century a medical missionary of the Presbyterian Board in India; died at her home, December 10.

John H. Hoxsey, M.D., Spokane, Wash.; American Medical College, St. Louis, 1885; aged 58; a member of the Washington State Medical Association; at one time physician to the Spokane County Poor Farm, and a member of the State Board of Medical Examiners; died at his home, November 29, from nephritis.

James Spencer Howard, M.D., Oswego, N. Y.; New York University, New York City, 1879; aged 80; for ten years surgeon to the Oswego City Hospital, and Oswego Orphan Asylum; a member of the board of health from 1908 to 1912; for several years jail physician; died in the Oswego Hospital, December 3.

Israel Cone Jones, M.D., New York City; Miami Medical College, Cincinnati, 1874; aged 67; a Fellow of the American Medical Association, and New York Academy of Medicine; since 1876 medical superintendent of the Home for Incurables, New York City; died in that institution, December 6.

Samuel Marcus Moore, M.D., Evanston, Ill.; Chicago Homeopathic Medical College, 1895; aged 47; a Fellow of the American Medical Association; from 1903 to 1914, chief surgeon of the Illinois Steel Company; died in the Greenwood Inn, Evanston, December 12, from pneumonia.

James E. Shannon, M.D., Sharon, Tenn.; University of Louisville, Ky., 1889; aged 52; formerly a Fellow of the

American Medical Association; a member of the Tennessee State Medical Association; died in St. Thomas Hospital, Martin, Tenn., December 1, from septicemia.

John Jay Sullivan, M.D., Passaic, N. J.; Albany (N. Y.) Medical College, 1890; aged 56; a member of the Medical Society of New Jersey; a specialist on internal medicine; died in Roosevelt Hospital, New York City, November 30, five days after an operation for gastric ulcer.

Hiram Beauregard Stout, M.D., Parkersburg, W. Va.; Medical College of Ohio, Cincinnati, 1899; aged 54; formerly a Fellow of the American Medical Association; a member of the West Virginia State Medical Association; died at his home, November 19, from arteriosclerosis.

Frank David Rieman, M.D., Paterson, N. J.; University and Bellevue Hospital Medical College, 1915; aged 33; a member of the visiting staff of the Isolation Hospital, and of the local board of school hygiene; died in St. Joseph's Hospital, Paterson, December 1, from pneumonia.

Herman F. W. Baltzer, M.D., St. Louis; University of Würzburg, Germany, 1875; aged 66; formerly a Fellow of the American Medical Association; a member of the Missouri State Medical Association; died in the Deaconess Hospital, St. Louis, October 17, from pneumonia.

John E. Bromwell, M.D., Mount Airy, Md.; University of Maryland, Baltimore, 1867; aged 77; formerly a Fellow of the American Medical Association; a member of the Medical and Chirurgical Faculty of Maryland; died at his home, November 9, from arteriosclerosis.

Daniel P. Gerberich, M.D., Lebanon, Pa.; Hahnemann Medical College, Philadelphia, 1881; aged 62; state senator from Lebanon County for two terms, and once president pro tem of the state senate; died at his home, November 29, from the effects of a fracture of the hip.

Daniel B. Summers, M.D., Shelby, Ohio; Pulte Medical College, Cincinnati, 1888; aged 54; a member of the Ohio State Medical Association; died at his home, November 30, from the effects of a gunshot wound, self-inflicted, it is believed, with suicidal intent.

William Merrick Semans, M.D., Delaware, Ohio; Miami Medical College, Cincinnati, 1887; aged 55; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; died at his home, December 5, from arteriosclerosis.

Sylvanus Chase Curran, M.D., Yonkers, N. Y.; Albany (N. Y.) Medical College, 1885; aged 71; for ten years captain of the Twenty-Third Separate Company, N. G., N. Y.; died in the home of his daughter in Yonkers, November 21, from cerebral hemorrhage.

William H. Wills, M.D., Milford Center, Ohio; Starling Medical College, Columbus, Ohio, 1879; aged 57; a member of the Ohio State Medical Association; died at his home, November 27, from injuries received in an automobile accident the day before.

Denis W. Barry, M.D., San Pedro de Madoris, Dominican Republic; Yale University, New Haven, 1884; aged 55; formerly a practitioner of Brooklyn and of Pretoria, South Africa; died in the Skene Sanitarium, Brooklyn, December 6, from pneumonia.

Sallie Justina Ermentrout, M.D., Eldridge, Calif.; Women's Medical College of Pennsylvania, Philadelphia, 1891; aged 60; a Fellow of the American Medical Association; a member of the staff of the Eldridge State Hospital; died at her home, November 21.

Adolphus Henry Carter, M.D., Wiggins, Colo.; Northwestern Medical College, St. Joseph, Mo., 1892; aged 67; formerly a Fellow of the American Medical Association; for many years a practitioner of Salt Lake City; died recently at his home.

William Alder Smith, M.D., Galena, Ill.; Northwestern University Medical School, Chicago, 1897; aged 45; a member of the Illinois State Medical Society; died at Council Hill, Ill., November 17, from asthma associated with heart disease.

Mark W. Bynum, M.D., Brownwood, Texas; University of Pennsylvania, Philadelphia, 1857; aged 82; once physician of Brown County, and president of the Brownwood District Association; a Confederate veteran; died at his home, November 28.

Jackson Walker, M.D., Bethany, Mo.; University of Michigan, Ann Arbor, 1867; aged 81; formerly a member of the Missouri State Medical Association; a veteran of the Civil War; died at his home, November 18, from cerebral hemorrhage.

George Abbott Campbell, M.D., Manchester, N. H.; Boston University School of Medicine, 1881; aged 60; for the last twenty years a florist and proprietor of the Ray Brook Gardens; died in a hospital in Manchaster, about December 2.

Oliver A. Collins, M.D., Mohawk, Ind.; Medical College of Indiana, Indianapolis, 1886; aged 54; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; died at his home, December 30.

George Leiter Greenawalt, M.D., Fort Wayne, Ind.; Bellevue Hospital Medical College, 1880; aged 66; a Fellow of the American Medical Association, and a widely known surgeon; died at his home, December 6, from cerebral hemorrhage.

Isaac B. Malcolm, M.D., Lowell, Mich.; American University of Pennsylvania, Eclectic, Philadelphia, 1867; aged 72; one of the earliest practitioners of Kent County; died suddenly on the street, November 21, from heart disease.

Thomas Jefferson Powell, M.D., Childersburg, Ala.; University of Maryland, Baltimore, 1866; aged 76; formerly a member of the Medical Association of the State of Alabama; died at his home, November 23, from angina pectoris.

James Walsh Southworth, M.D., Glasgow, Mo.; New York University, New York City, 1862; aged 79; assistant surgeon of the Eighth New Hampshire Volunteer Infantry, during the Civil War; died at his home, about November 21.

Henry L. Porter, M.D., Seneca, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1880; aged 68; a Fellow of the American Medical Association; died in a hospital in St. Louis, November 15, after a surgical operation.

John M. Woodburn, M.D., Boise, Idaho; Jefferson Medical College, 1881; aged 58; formerly a member of the Idaho State Medical Association; died in a hospital in Boise, November 28, from acute dilatation of the heart.

William Gibson McClumphy, M.D., Moundsville, W. Va.; Starling Medical College, Columbus, Ohio, 1882; aged 67; a member of the West Virginia State Medical Association; died at his home, November 26, from malaria.

Clarence Morgan Kurtz, M.D., Reading, Pa.; Jefferson Medical College, 1886; aged 56; a member of the Medical Society of the State of Pennsylvania; died suddenly at his country home, Old Ferry, Pa., November 25.

Emmett Burr Daley, M.D., Bennington, Vt.; New York University New York, 1879; aged 62; a member of the Vermont State Medical Society; died in the Samaritan Hospital, Troy, N. Y., October 10, from acute nephritis.

Harry Alta Andrews, M.D., San Francisco; Cooper Medical College, San Francisco, 1891; aged 48; formerly a member of the Medical Society of the State of California; died at his home, August 22, from cerebral embolism.

Lafayette D. Fuller, M.D., Rockville, Conn.; Eclectic Medical College of Pennsylvania, Philadelphia, 1867; aged 73; a medical cadet during the Civil War; died in his apartment, December 6, from cerebral embolism.

Harry Hallock Lente, M.D., Oldtown, Me.; Bowdoin Medical School, Brunswick and Portland, Me., 1912; aged 31; a member of the Maine Medical Association; died at his home, about November 3, from meningitis.

William Frederic Boes, M.D., Brooklyn; Long Island College Hospital, Brooklyn, 1892; aged 64; a member of the Medical Society of the State of New York; died at his home, November 27, from arteriosclerosis.

Robert Eugene Cato, M.D., Americus, Ga.; Jefferson Medical College, 1886; aged 57; a Fellow of the American Medical Association; died at his home, in Reese Park, Americus, November 26, from heart disease.

Richard Leonard Eldredge, M.D., Bonfield, Ill.; College of Physicians and Surgeons, Chicago, 1903; aged 51; a Fellow of the American Medical Association; died in Minooka, Ill., November 29, from pneumonia.

Elias B. Mesirow, M.D., Chicago; College of Physicians and Surgeons, Chicago, 1894; aged 56; formerly a Fellow of the American Medical Association; died at his home, December 10, from lobar pneumonia.

Gilmore Robert Stevenson, Hubbard, Ohio (license, Ohio, years of practice, 1896); aged 79; for fifty-one years a practitioner; a veteran of the Civil War; died in the Youngstown (Ohio) Hospital, December 2.

Margaret Enort Colby, M.D., Berkeley, Calif.; Northwestern University Woman's Medical School, Chicago, 1884;

aged 62; formerly a practitioner of Clear Lake, Iowa; died at her home, December 10.

David Cleveland Gordon, M.D., Washington, D. C.; Jefferson Medical College, 1856; aged 81; a veteran of the Civil War; a clergyman of the Protestant Episcopal Church; died at his home, December 1.

David Ashby Kincaid, M.D., South Portland, Me.; Bowdoin Medical School, Brunswick and Portland, Me., 1878; aged 63; formerly a member of the Maine Medical Association; died at his home, November 29.

Aloysius Kesseler, M.D., New York City; New York University, New York City, 1877; aged 74; formerly a member of the Medical Society of the State of New York; died at his home, November 30.

James A. Phillips, M.D., Morristown, N. Y.; Albany (N. Y.) Medical College, 1865; aged 80; for forty-eight years a practitioner of Morristown; died at the home of his son in Syracuse, November 28.

Henry Chorley Watt, M.D., Colorado Springs, Colo.; licentiate of the Apothecaries' Society of London, 1875; aged 45; a member of the Colorado State Medical Society; died at his home, December 1.

Nathaniel Babcock Darling, M.D., Brooklyn; College of Physicians and Surgeons in the City of New York, 1873; aged 83; also a pharmacist; died at his home, November 28, from arteriosclerosis.

Franklin Clark Terrill, M.D., Big Rapids, Mich.; University of Michigan, Ann Arbor, 1879; aged 68; a member of the Michigan State Medical Society; died at his home, December 4, from carcinoma.

John Francis McCooey, M.D., Woonsocket, R. I.; College of Physicians and Surgeons, Baltimore, 1903; aged 37; died in St. Vincent's Hospital, Worcester, Mass., December 1, from peritonitis.

James Louis Beyea, M.D., New York City; New York Homeopathic Medical College, 1880; aged 80; a veteran of the Civil War; died in the Flower Hospital, New York City, December 4.

Joseph de la Cruz de Varona, M.D., New York City; Bellevue Hospital Medical College, 1865; aged 74; died at the home of his brother in New York City, November 30, from influenza.

Richard West Bourne, M.D., Mexico, Mo.; Jefferson Medical College, 1848; aged 97; the first mayor of Mexico, elected in 1856; died at the home of his daughter in Mexico, November 23.

Charles James Allen, M.D., Sheffield, Iowa; Rush Medical College, 1887; aged 61; died at his home, August 31, from tuberculosis.

Quintus L. Adams, M.D., Philadelphia; Jefferson Medical College, 1888; aged 51; died at his home, November 27, from pneumonia.

Henry A. Crawshaw, M.D., Bush, Ill.; St. Louis College of Physicians and Surgeons, 1895; aged 47; was instantly killed in an automobile accident at Carbondale, Ill., November 7.

Isaac Riley Bucher, M.D., Lebanon, Pa.; Pennsylvania Medical College, Philadelphia, 1857; aged 85; died at the home of his son in Lebanon, November 23.

Albert Charles Nussle, M.D., Chippewa Falls, Wis.; University of Illinois, Chicago, 1908; aged 33; was accidentally drowned, October 14.

Thomas J. S. Kimbrough, M.D., Weatherford, Texas; University of Nashville, Tenn., 1870; aged 74; died at his home, September 28, from nephritis.

Henry D. Jones, M.D., Grand Marais, Minn.; Eclectic Medical College of the City of New York, 1878; aged 82; died in East Chatham, N. Y., August 21, from senile debility.

A. T. Hagemeyer, M.D., Youngstown, Ohio; Medical College of Ohio, Cincinnati, 1886; aged 58; was found dead in bed, November 30.

J. Abraham Wilson, M.D., Billings, Mo.; University of Tennessee, Nashville, 1885; aged 82; died at his home, October 17, from arteriosclerosis.

A. W. H. Wullschleger, M.D., Reno, Nev.; University of Zurich, Switzerland, 1902; aged 38; died at his home, October 11, from edema of the brain.

R. H. White, Cabot, Ark. (license, Arkansas, 1903); aged 57; a practitioner since 1893; died in Jacksonville, Ark., in September, from tuberculosis.

Davis Boswell, M.D., Beatrice, Neb.; Rush Medical College, 1888; aged about 70; died in Birmingham, Ala., November 24.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

TIMES-PICAYUNE THROWS OUT MEDICAL FRAUDS

Accepts Only Medical Advertisements That Have Been Investigated and Passed on by State Board of Health

About four years ago THE JOURNAL commented editorially on the rules which the New Orleans *Item* then put into effect governing the acceptance of medical advertising. These rules, while not binding the *Item* to reject all "patent medicine" advertising, did call for the rejection of such as was plainly fraudulent or was, after rigid scrutiny, open to suspicion. As the managing editor of the *Item* wrote at the time: "Practically the whole business will go out on October 1. I am frank to say that I did not know how bad it was until I had it collected and began to look at it in a critical way." The *Item* was fortunate in having connected with its staff a physician who aided in drawing up its rules and, more important yet, in interpreting and applying these rules.

Within the last month or two another New Orleans paper —the *Times-Picayune*—has made a decision with reference to the acceptance of medical advertisements that is, if anything, more far reaching than that made by the *Item*. The *Times-Picayune* is going to follow the standards for medical advertising set by the National Vigilance Committee of the Associated Advertising Clubs of the World. These standards are practically identical with the recommendations in the report issued about two years ago by the Commission on Proprietary Medicines that was appointed by the American Pharmaceutical Association. The *Times-Picayune* explains how it is going to be in a position to follow these standards:

"In order that these rules might be fully maintained, it obtained the cooperation of Dr. Oscar Dowling, president of the Louisiana State Board of Health, to see that they were strictly lived up to, agreeing not to print any medical advertisements without first receiving the approval of the Louisiana State Board of Health. Sept. 1, 1917, the Louisiana State Board of Health undertook the work for the *Times-Picayune*.

"This set another precedent in leadership for the *Times-Picayune*, as it was the first newspaper in the South, and probably anywhere in the country, to take such an advanced step. Censorship by the State Board of Health means that every medical advertisement now appearing in the *Times-Picayune* has been thoroughly investigated and passed upon by the State Board of Health."

The new policy of the *Times-Picayune* has been officially endorsed in resolutions adopted both by the Southern Medical Association in recent annual convention and by the Orleans Parish Medical Society at a meeting held November 26. Nor is the New Orleans *Item* backward in extending its congratulations to its competitor contemporary. This paper, in a recent discussion of "patent medicine" frauds and the nostrum evil generally, said:

"Our competitor, the *Times-Picayune*, has recently joined the ranks of newspapers which recognize this evil. It now refuses to accept money for advertising medicines whose advertising is not approved by the Louisiana State Board of Health. The president of this board, Dr. Oscar Dowling, has taken a brave, a creditable and, we believe, a highly intelligent stand against these frauds. It is with sincere pleasure that we note the stand taken by the *Times-Picayune*. When it is borne in mind that the amount of advertising of this class runs into tens of thousands of dollars a year, it will be appreciated that our contemporary is sacrificing large revenue for correct principle."

Louisiana is one of the few states that have made any serious effort to curb the evils of quackery and "patent medicine" frauds. Its work in this direction and the growth

of public opinion as reflected in the action of two of its most influential newspapers is undoubtedly due to the fact that the state has in its chief health officer an aggressive and uncompromising foe of fraud.

Correspondence

ENLARGEMENT OF LINGUAL TONSIL IN WHOOPING COUGH

To the Editor:—Last week I had called to my attention again a condition which I have noticed in whooping cough and of which, so far as I have been able to find out, there has been no mention made. For a few years back I have been examining all the patients with whooping cough that I have seen, and I find an inflammation and enlargement of the lingual tonsil in practically every case. Since April, 1914, I have examined forty-three cases and in all but one there was this same finding in connection with other throat symptoms. It has been decidedly more prevalent than any other one condition in the throat, with the possible exception of an acute pharyngitis.

Through THE JOURNAL I should like to ask other physicians to examine for inflammation of the lingual tonsil in their cases of whooping cough, because if this is a constant condition in this trouble, I believe it possible to work out a more rational treatment for this cough than we have had.

W. M. RUCKLE, M.D., Grand Rapids, Wis.

"PRAYERS FOR PROFIT"

To the Editor:—An item headed "Prayers for Profit" in THE JOURNAL for June 9 has come to my attention. Its occasion is THE JOURNAL'S satisfaction over the recent defeat of a proposed amendment to the laws of Ohio legalizing spiritual healing.

Permit me to correct the statement which it contains, that "it is well known" that Christian Science practitioners treat their patients "for the profit there is in it." It is not well known for it is not true, neither is there evidence on which to base the charge, nor the allied charge that the church is "evidently commercial." On the contrary, Christian Scientists are well known to their neighbors throughout the world to be an honest and conscientious body of people not given to charlatanism of any sort.

But the criticism of THE JOURNAL manifestly arises, neither from the fact that Christian Scientists are paid for their healing ministrations, nor from a supposed variation from the practice of Jesus, but from the fact that THE JOURNAL disapproves of the healing effort of Christian Science. Indeed, it evidently regards all spiritual healing as inimical. The evidence of this is supplied by the fact that the section which it was proposed to add to the Ohio Medical Practice Act, and over the defeat of which THE JOURNAL rejoices, reads as follows: "Nothing in this chapter shall be construed to apply to or interfere in any way with the practice of those who endeavor to prevent or cure disease or suffering by spiritual means or prayer."

It is evident, therefore, that while THE JOURNAL refers with approval to Jesus and his practices, it nevertheless believes in interfering with healing by spiritual means or prayer.

In these circumstances it may not be out of place to remind your readers that Jesus could not have passed the examination in materia medica which is properly required of those preparing to administer material remedies, but this fact did not prevent him from earning the title of "the Great Physician."

AVERY COONLEY, Chicago.

[COMMENT.—The item to which Mr. Avery Coonley takes exception—Mr. Coonley, it will be remembered, is the "Christian Science Committee on Publication for the State of Illinois"—was a brief editorial comment to the effect that the Christian Science Church is said to have among its followers no scientist recognized by men of science, no biblical authority recognized by biblical students, no man of standing in the world of philosophy and no physician of standing among medical men. It further commended the attitude of the state of Ohio for not granting the Eddyites who would treat the sick exemption from the educational requirements of the Medical Practice Act of that state.

Mr. Coonley's statement that "Jesus could not have passed the examination in materia medica which is properly required of those preparing to administer material remedies" might be true if Christ is conceived as a man without the powers of divinity. It is equally true that Moses could not pass the examination given by the Bar Association nor could Noah qualify as commander of an ocean liner. These limitations, however, should not be held against either Noah or Moses; neither should one criticize the public of today for insisting that their legal advisers and their ship commanders should have knowledge commensurate with twentieth century requirements.—ED.]

A NEW CONCEPTION OF THE CAUSE OF SCARLET FEVER AND THE OTHER ACUTE EXANTHEMS

To the Editor:—In 1895, Bergé ("La pathogénie de la scarlatine," Paris) said, in regard to the cause of scarlet fever, "An imposing array of evidence points to the streptococcus in one of its virulent forms as the pathogenic agent of the disease." Time and further experimental work have served only to strengthen this belief in the minds of many investigators.

It is generally assumed that the chief portal of entry for the causative agent in scarlet fever is the upper respiratory tract, more particularly the throat and tonsils. However, the many apparently typical cases of scarlet fever developing shortly after childbirth, severe burns, wounds and surgical operations suggest the fact that the causative agent may also find extrafaucial portals of entry. For many years we have been aware of the relation between complicating streptococcus infection and childbirth, burns, wounds and surgical operations.

How is it possible for the same micro-organism to cause in some persons the typical symptoms of ordinary streptococcic puerperal septicemia, streptococcic wound infection and streptococcic sore throat, and in other persons a typical or atypical scarlet fever? What, after all, is the difference between a case of septic sore throat due to the streptococcus and a case of so-called scarlet fever? I would suggest that these various conditions are due to differences in the susceptibilities of persons to the streptococcus. Scarlet fever may possibly be described as a streptococcic anaphylaxis superimposed on a streptococcic sore throat, or on a septicemia from some other portal of entry, in a person who has previously been made sensitive or hypersusceptible to the streptococcus, either through the gastro-intestinal tract or in some other way.

This conception is based on a thorough study of both scarlet fever and anaphylaxis. I am sure that the more one studies these two conditions, the more convinced one will become that the former is nothing more than a special manifestation of the latter.

Furthermore, may we not explain the other acute exanthems on the same basis? The only differences may be in regard to the specific micro-organisms and the portals of entry concerned in sensitization and intoxication.

When the time comes in which the microscope seems to fail us in the further search for a specific causal agent, should we not attempt to correlate the various facts that we already have at our disposal, and make intelligent use of them for the explanation of certain diseases that may depend on something more than a mere primary infection with a micro-organism? LEVERETT DALE BRISTOL, M.D., Augusta, Maine.
State Commissioner of Health.

Military Medicine.—The fundamental object of the Army Medical Service in war is to provide healthy men for the fighting line, to keep these men in good physical condition, and if sick or wounded, to make them fit and ready for fighting as soon as possible.—Col. T. H. Goodwin.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CHLOROFORM IN STERILIZATION OF CULTURES

To the Editor:—In THE JOURNAL, Nov. 10, 1917, p. 1658, appears an abstract of an article by G. Stradiotti and G. Ollino on "Autogenous Vaccines in Treatment of War Wounds," published in the *Rivista critica di clinica medica* (1917, **18**, 357) in which the statement is made that chloroform was used to sterilize the cultures. Can you give me information as to the amount of chloroform used to sterilize the vaccines?

W. E. PUTZ, M.D., Chicago.

ANSWER.—The technic is only casually mentioned, as follows: "For the sterilization of the cultures, the method selected was always the addition of chloroform in slight excess to the culture fluid, agitating at intervals during two or three hours; after this the fluid was always absolutely sterile; so much so that in the several hundred injections we made we never noted an abscess or febrile reaction of any account or evidences of local intolerance; we noted nothing but fleeting redness at the site of the injection, and the usual slight painfulness, which never lasted more than a few days."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 8. Chairman, Dr. S. W. Welch, Montgomery.

COLORADO: Denver, Jan. 8. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Jan. 8. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. G. A. Batten, Box 375, Honolulu.

INDIANA: Indianapolis, Jan. 8-10. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

MINNESOTA: St. Paul, Jan. 2-4. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: New York City, Jan. 9-17. Sec., Dr. J. S. Rodman, 310 Real Estate Bldg., Broad and Chestnut Sts., Philadelphia.

NEW MEXICO: Sante Fe, Jan. 14. Sec., Dr. R. K. McClanahan, East Las Vegas.

NEW YORK: Albany, Buffalo, New York City and Syracuse, Jan. 29-Feb. 1. Sec., Dr. W. J. Denno, Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 8-9. Sec., Dr. J. J. Williams, Weatherford.

OREGON: Portland, Jan. 1. Sec., Dr. Herbert S. Nichols, Portland.

PENNSYLVANIA: Philadelphia, Jan. 8-10. Sec., Nathan C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, Jan. 3. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 8. Sec., Dr. P. B. Jenkins, Waubay.

UTAH: Salt Lake City, Jan. 7-8. Cor. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

WASHINGTON: Spokane, Jan. 1. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

WISCONSIN: Madison, Jan. 14. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

WYOMING: Laramie, Feb. 6-8. Sec., Dr. H. E. McCallum, Laramie.

Washington July Examination

Dr. C. N. Suttner, secretary of the Washington State Board of Medical Examiners, reports the written examination held at Seattle, July 3-5, 1917. The examination covered 11 subjects and included 110 questions. An average of 60 per cent. in each subject was required to pass. Of the 43 candidates examined, 40, including 5 osteopaths, passed, and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles		(1916)	93.6
		(1917)	81.7
Hahnemann Med. College of the Pacific		(1916) 74.5; (1917)	83.9
Denver and Gross College of Med.		(1905)	84.6
Columbian University		(1900)	84.2
Chicago College of Medicine and Surgery	(1908) 75.9;	(1916)	80.2
	83.6;	(1917)	86.1
Northwestern University		(1906) 87.9; (1916)	88.3
Rush Medical College		(1899) 80.4; (1906)	92.2
University of Illinois (1916) 74.5, 80.6, 88.3.			
Physio-Medical College of Indiana		(1898)	80.3
Southwestern Homeo. Medical College and Hospital		(1909)	84.3
University of Louisville		(1917)	84.1
University of Michigan Medical School		(1917)	88.4
American Medical College		(1903)	70.1
St. Louis University		(1915)	84
Washington University		(1910)	78.9
John A. Creighton Medical College		(1916)	73.8
Columbia University		(1896)	80.9
University of Oregon (1917) 87.6, 92.2, 93.8.			
Jefferson Medical College		(1916)	86.7
Medico-Chirurgical College of Philadelphia		(1905)	68.7
University of Pennsylvania		(1916) 88.8; (1917)	86.2
Nippon Special Medical School		(1912)	84.5
Okayama Special Medical School		(1913)	85.5
	FAILED		
Barnes Medical College		(1905)	*
Miami Medical College		(1888)	*
Jefferson Medical College of Philadelphia		(1892)	*

* No grade given.

Connecticut July Examination

Dr. Charles A. Tuttle, secretary of the Connecticut State Medical Examining Board, reports the written examination held at New Haven, July 10-11, 1917. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 37 candidates examined, 24 passed and 13 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University	(1915) 84.3; (1917)	80.2, 81.5, 83.4,	83.7
College of Physicians and Surgeons, Baltimore		(1915	81.3
Johns Hopkins University		(1916)	79.7
University of Maryland		(1916)	80.6
Harvard University	(1915) 84.7, 89.8;	(1917)	88.2
Tufts College Medical School		(1917)	80.4, 86.5
Dartmouth Medical School		(1914)	76.7
Albany Medical College		(1898)	75.8
Columbia University	(1912) 83;	(1916)	78.2, 86.6
Long Island College Hospital		(1916)	75.9
Jefferson Medical College of Philadelphia		(1912)	76.1
Medico-Chirurgical College of Philadelphia		(1909)	75.4
Woman's Medical College of Pennsylvania		(1912)	75.2
University of Vermont		(1916)	83.2
University of Glasgow		(1909)	77.2
	FAILED		
Maryland Medical College		(1913)	57.9
University of Maryland		(1916)	73.8
Harvard University		(1915)	73.3
Tufts College Medical School		(1917)	73.9, 74.3
University of Vermont	(1912) 72.4; (1914) 68.2;	(1917)	72.2
University of North Carolina		(1910)	60.8
Medico-Chirurgical College of Philadelphia		(1915)	72.8
Meharry Medical College		(1913)	63.4
Medical College of Virginia		(1917)	62.5
University of Athens		(1917)	53.5

Colorado July Examination

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, July 5, 1917. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 27 candidates examined, 20, including 1 osteopath, passed, and 7, including 4 osteopaths and 1 drugless healer, failed. Twenty candidates, including 2 osteopaths, were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Colorado	(1917) 80, 81.1, 82.5, 82.7, 83, 83.7, 84, 84.1, 84.1, 84.5, 84.6, 86.1, 86.4, 87, 89.2, 89.7, 89.7.		
St. Louis College of Physicians and Surgeons		(1914)	75.4
North Carolina Medical College		(1917)	75.1
	FAILED		
St. Louis College of Physicians and Surgeons		(1915)	70.6
University of Tennessee		(1903)	48.4

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1910)	(1914) Illinois
Chicago Homeopathic Medical College			(1897) Illinois
College of Physicians and Surgeons, Chicago			(1909) Illinois
Hahnemann Medical College, Chicago		(1906)	Illinois; (1910) Iowa
Medical College of Indiana			(1902) New York
College of Physicians and Surgeons, Keokuk			(1889) Iowa
Keokuk Medical College, Coll. of Phys. and Surg.			(1901) Iowa
State University of Iowa College of Medicine			(1916) Iowa
University of Kansas			(1906) Kansas
Baltimore Medical College			(1898) N. Dakota
St. Louis University			(1908) Illinois
Washington University			(1905) Missouri
University of Oklahoma			(1911) Oklahoma
University of Nashville			(1901) Tennessee
Vanderbilt University			(1915) Missouri
Marquette University			(1916) Wisconsin

Book Notices

REPORT OF THE PHYSICAL WELFARE OF MOTHERS AND CHILDREN: ENGLAND AND WALES. Volume 1. By E. W. Hope, M.D., D.Sc., Medical Officer of Health for the City and Port of Liverpool. Volume 2. By Janet M. Campbell, M.D., M.S., One of Senior Medical Officers, Board of Education. The Carnegie United Kingdom Trust. Paper, 1917.

"Save the babies that are born" is the central idea of this report. The object is avowedly to stimulate interest in the task of reducing the amount of illness and mortality among mothers and children of the poor. The authors consider such aspects of the problem as the incidence of infant mortality and its relation to poverty, municipal sanitation, the establishment of antenatal and postnatal centers, special aid for expectant mothers in rural districts, and the training of health officers and midwives.

It is pointed out that bad housing and poverty go hand in hand, and that the economic condition of the parent is largely responsible for congenital weakness in the child, since the struggle for existence among the poor reacts on the fetus. The importance of proper sanitation is recognized for the reason that filthy courts and alleys, bad drainage, and the absence of personal and domestic hygiene are powerful factors in the intestinal diseases of infancy. Diarrhea and enteritis are cited as common in neighborhoods in which defective sanitation and bad housing are prevalent.

Considerable attention is paid to antenatal and postnatal supervision of mothers and babies by the health authorities. The antenatal clinic reduces the number of stillbirths and miscarriages among the poor, and aids in training the prospective mother for the future care of her child. It also enables the practitioner to detect and check such ailments as varicose veins, albuminuria and ophthalmia, and in cases in which syphilis is suspected, to apply the Wassermann test with the aid of the local bacteriologic laboratory. Postnatal supervision in England and Wales includes provision for the registration of births and deaths by the authorities, and for the recording of a brief life history of the child, as well as for visits to the home at intervals until the child is of school age.

The provision of sanatoriums for expectant mothers in rural districts is not yet an accomplished fact in the United Kingdom, but the authors strongly recommend their establishment, on account of the difficulty of getting skilled medical aid to the mothers in periods of emergency. On this account, Wales and parts of England remote from London and the great towns suffer more than the latter in infant mortality and loss of maternal life. The authors also recommend the subsidizing of midwifery service in rural districts by the county councils.

The need of intelligent health authorities is emphasized because of their responsibility, not only in problems of municipal housing, but also in the exercise of authority over the practice of midwifery. The regulation and training of midwives receives the fullest attention from the authors. They report a decided decline in the death rate from puerperal septic diseases from 1900 to 1914, as a result of the passage of the Midwives Act in 1902, whereby the practice of midwifery by uncertified midwives was made practically impossible. Through the agency of the Central Midwives Board, which was established to regulate the training, examination, certification and conduct of the practice of midwives, the standard has been materially raised.

In the second volume of the report, much attention is devoted to a historical survey of English midwifery during the period from the sixteenth to the nineteenth century, inclusive. It also contains a valuable chapter on modern conditions in England and Wales, and another on present-day practice of midwifery in Austria, France, Germany, Russia and Switzerland. Attention is directed to the fact that whereas in the United States the general tendency is to eliminate the midwife because of the low grade of intelligence her type represents, the policy in European countries is to improve her status and educate her more broadly for her work. In England, as on the continent, she is recognized as a permanent institution, through whose care passes a large percentage of the births in the United Kingdom, amounting, in some urban centers, to more than 75 per cent.

The report includes many interesting charts showing the incidence of maternal and of infant mortality; tables of returns from medical health officers; model plans of health administration; model housing and playgrounds specifications, and abstracts of the Midwives Act, the Notification of Births Act and other legislative enactments affecting the welfare of mothers and children.

NOTES ON GALVANISM AND FARADISM. By E. M. Magill, M.B., B.S., D.P.H. Cloth. Price, $1.50 net. Pp. 220, with 67 illustrations. New York: Paul B. Hoeber, 1916.

This is a concise statement of the facts concerning this much neglected branch of therapeutics. As stated by the author, the book is primarily intended for the use of masseuses; but the practitioner who does not have the time or desire to wade through the larger and more technical works can get a good working knowledge of the subject from this book. One of the especially pleasing features is the giving of exact and minute directions to the student for applying the different treatments.

Social Medicine, Medical Economics and Miscellany

An Irruption of Antiseptics

Under this heading, the point of view of the pharmacist is thus presented in an editorial note in the *Pharmaceutical Journal and Pharmacist* (1917, **99**, 120):

"While the pharmacist is not professionally concerned with the relative therapeutic merits of the many antiseptics which have had a vogue in the past or are now competing for supremacy, he is bound, both for professional and business reasons, to keep himself conversant with all the latest phases of antiseptic treatment, with special reference to new antiseptic compounds and preparations. Sooth to say, since the outbreak of war this has been no easy task. One result of the enormous demand for hitherto staple and standard antiseptics for the treatment of war wounds has naturally been to stimulate research for the discovery of effective substitutes, while the progressive surgeon, always on the *qui vive* for improved methods of asepsis or antiseptics, has utilized to the utmost the legitimate opportunities afforded by unprecedentedly vast and varied clinical experience to give a trial to antiseptic agents and methods for which in normal times there would have been little or no opening. It is hardly an exaggeration to say that for a year or more the medical journals have announced new antiseptics at the rate of about one a week, and the battle between the partisans of the different discoveries rages loud and long. Fortunately it is not our affair to adjudicate on the issues of the controversy, but the unfortunate pharmacist can hardly be an indifferent spectator of it, seeing that he may be expected to stock or prepare on short notice one or other of the variants of, say, Dakin's solution or the paraffin compound for the treatment of burns, or to reel off for the information of the medical inquirer all about the chemistry and transcendent potency of chloramin-T, or any of the other chemicosesquipedalianly named compounds which we are assured is destined for ever to supersede all its predecesors and contemporaries. It would ill become us to belittle any effort toward the advance of antiseptic surgery, or to deprecate the need for continuous criticism and revision of existing methods and material. We have traveled far since Lister revolutionized clinical surgery as regards the prevention and treatment of the microbic infection of living tissues. But the principles on which his method was based, while not unchallenged, remain unshaken. Such differences as do obtain refer exclusively to methods of treatment or to the superiority of one antiseptic over another. In the meantime, happily, the patient is not sacrificed to an absolutely bad as compared with a perfectly good method. At the worst, all that happens is that the inferior method may

delay the cure. From the pharmacist's point of view, it would be an immense relief if it were possible for the medical profession, if not to adopt Sir Almroth Wright's simple saline plan, at least to attain to some measure of standardization and uniformity in the selection and use of antiseptics, so as to minimize the practical difficulties and vexations inherent in the present lack of system, which opens the way for the needless multiplication not only of antiseptics, but of variants in the composition and preparation of them for use."

Medicolegal

Liability of Employer for Surgical and Hospital Services After Thirty-Day Period

(In re Henderson (Ind.), 116 N. E. R. 315)

The Appellate Court of Indiana, answering an inquiry of the industrial board of the state, says, in construing Section 25 of the workmen's compensation act, that it will be seen that such section provides for the furnishing by the employer of an attending physician in two instances only, namely, during the thirty-day period from the date of the injury, when he is required to furnish such physician, and thereafter when he may at his option furnish such physician. The additional services of a surgeon and hospital are limited to said periods and conditions. There is no authority to furnish the latter services except during the period of the attendance of the physician, furnished as indicated. If during the first thirty days after the injury the employer furnishes such physician, or, without cause, fails to furnish such physician, in either event the attending physician or the industrial board may during such period require surgical and hospital services for which the employer may be properly charged. However, after the thirty-day period no obligation rests on the employer to furnish an attending physician, and in the court's judgment the board has no authority or discretionary power by which it may require such a service after the expiration of said period; and hence, unless the employer elects to furnish such attending physician, the power of the board to require surgical and hospital services and supplies ends with the expiration of the thirty-day period. But the legislature intended that, so long as the employer continues to exercise the option that the statute gives him, to furnish voluntarily the injured employee a physician, if either such physician or the industrial board should determine that any surgical or hospital services are necessary in such case, the employer should be liable therefor. Moreover, if in this case the industrial board is of the opinion that the evidence before it shows that the emergency for the amputation of the employee's foot arose before the expiration of the thirty-day period, and that such amputation should have been and could have been performed before the expiration thereof, and that the employer was responsible for the delay that prevented the amputation before the expiration of such period, the board would be authorized, under the section of the act in question, in holding such employer liable for any surgical or hospital service and supplies that were in fact furnished or might have been furnished within said period, notwithstanding the employer's written notice to the attending physician and the hospital that he would not be liable for any surgical and hospital services after the expiration of thirty days from the date of the injury, and notwithstanding such services may not have been in fact furnished until after the expiration of said period.

Proof Required of Standard of Care and Skill

(Norkett vs. Martin (Colo.), 165 Pac. R. 256)

The Supreme Court of Colorado, in affirming a judgment in favor of the defendant, a physician, says that this action was brought by a minor suing by her next friend to recover damages for alleged negligence in the diagnosis and treatment of an ailment from which she was suffering, a verdict being returned for the defendant and a judgment of dismissal being entered thereon. The only error alleged was in an instruction to the jury which read: "In considering whether the defendant, in his diagnosis, care and treatment of the plaintiff's injury or disease exercised ordinary care, you cannot set up a standard of your own, but must be guided in that regard solely by the testimony of the physicians, and if you are unable to determine from the testimony or the physicians what constituted ordinary care and skill under the circumstances of this case, there would be a failure of proof on the only standard for your guidance, and the evidence would be insufficient to warrant any verdict for the plaintiff." Counsel conceded that this instruction was a copy of one that was approved in *McGraw* v. *Kerr*, 23 Colo. App. 163, 128 Pac. 870, but insisted that a difference in facts rendered that case inapplicable. But this court cannot agree with that conclusion. The court there was considering, and discussed at some length, by what evidence a jury should be guided in determining whether or not a physician had exercised such care and skill as his employment required, and held that it was a question for experts. It also held that "if no standard was established by the testimony of physicians, then the jury had no standard." This case is clearly within the rule thus laid down. The principle on which the rule is based was announced by the court in *Jackson* v. *Burnham*, 20 Colo. at page 536, 39 Pac. 577, and is supported by abundant authority. The instruction was correct.

Treatment of Cancer of Mouth by Dentist Under Direction of Physician

(In re Carpenter's Estate (Mich.), 162 N. W. R. 963)

The Supreme Court of Michigan affirms a judgment in favor of the claimant, a dentist, who charged for treating and cleansing cancer of the mouth three times a day for seventy-seven days, at $2 per day, and from four to six times a day for sixty-four days, at $3 per day, and made three charges of $4 each for cocain and antiseptic. The court says it appeared from the record that the patient was suffering from an incurable cancer of the mouth. The record also showed beyond question that the treatments administered by the claimant were so administered from the very first under the direction of a duly qualified physician, first under one physician, and later under another. It further showed that such treatments were necessarily administered from three to six times each day, the lesion in the jaw being extremely painful, and emitting a discharge highly offensive in odor. It further appeared that in the administering of said treatments some skill was required. No question was raised in this record as to the value of the claimant's services. At the conclusion of the claimant's case, counsel for the estate made a motion for a directed verdict on the ground that the services rendered by the claimant were for the treatment of a cancer by a man not shown to be legally qualified to practice medicine in the state of Michigan; that a treatment of cancer by a dentist is a treatment in violation of the law. He said: "The only question of importance involved in this case is whether the claimant in doing what he did for the decedent was engaged in the practice of medicine contrary to the provisions of Act 237 of the Public Acts of 1899 as amended." But the court is of the opinion that the claimant was entitled to recover on either of two theories: First, that the services rendered were those of an ordinary nurse under the direction of a competent and duly qualified surgeon; and, second, that they were rendered by the claimant as a duly qualified dentist under the provisions of Act 183 of the Public Acts of 1913, Section 7 of which provides: "Any person shall be said to be practicing dentistry within the meaning of this act . . . who shall . . . treat diseases or lesions of the human teeth or jaws, . . . or who shall for a fee, salary, or other award paid or to be paid, . . . treat diseases or lesions of the human teeth or jaws." The treatments administered by the claimant would clearly fall within the definition of the practice of dentistry contained in the statute. The court is of the opinion that the claimant in rendering the services for which claim was made was not practicing medicine within the meaning of Act 237, Public Acts of 1899, nor of Act No. 368, Public Acts of 1913.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Minneapolis, Dec. 27-29.
American Physiological Society, Minneapolis, Dec. 27-29.
Porto Rico Medical Association, San Juan, Dec. 22-23.
Society of American Bacteriologists, Washington, D. C., Dec. 27-29.

SOUTHERN MEDICAL ASSOCIATION

Eleventh Annual Meeting, held at Memphis, Tenn., Nov. 12-15, 1917

(Continued from page 2067)

Tetanus Following Laparotomy for Ectopic Pregnancy; Treatment by Subarachnoid Injections of Magnesium Sulphate and Antitetanic Serum; Recovery

DR. DEWITT B. CASLER, Baltimore: Certain patients are definite tetanus carriers, and, as such, are liable to be a source of infection to themselves in any surgical operation on the bowel, or about the rectum. In any abdominal operation, especially in pelvic work, when the surgeon has to deal with inflammatory masses, indurated and adherent to the bowel wall, great care should be taken to close in this indurated area as thoroughly as possible, and so avoid the danger of tetanus developing in the injured bowel wall. In every case of postoperative tetanus, it is wise to begin at once subcutaneous injections of magnesium sulphate, and in the severe cases, subarachnoid injections. There is always a certain amount of danger from paralysis of the respiratory center, and when subarachnoid injections are given, means for artificial respiration should be at hand. Magnesium sulphate given intraspinally affords the greatest amount of comfort and relief in those cases, in which death often comes, not only from the toxemia, but also from exhaustion.

Popularizing Public Health

DRS. C. E. TERRY and F. SCHNEIDER, JR., New York: As a means of bringing to the public a realization of health truths and a knowledge of the importance of health work, the family magazine has unparalleled possibilities. The seventh baby campaign has pushed this experiment in constructive journalism a step farther. A field force of trained and experienced public health nurses has been assembled, and two traveling laboratories with experienced laboratory men have been provided. This field force is now engaged in making surveys of infant mortality in particular, and public health work in general, in communities of between 10,000 and 40,000 population. Careful inventories of local conditions are made, and reports are submitted giving findings and outlining a practical program for public health progress. The field work is conducted only on the request of local authorities, and with their cooperation. The subjects covered are infant mortality in particular, that is, the number and causes of infant deaths and existing efforts to prevent them; milk supply; water supply; sewers and sewage disposal; privies and fly-breeding; waste disposal, and organization and budget of the health department.

Distribution of Vaccines and Serums by the State

DR. C. A. SHORE, Raleigh, N. C.: Cities and many counties should have their own laboratory for diagnostic purposes and for the control of water and milk supplies. The state laboratory should serve sections not otherwise provided for, and in addition should have a much wider field of usefulness and a direct public health service in making and distributing those vaccines and serums that have been accepted as reliable curative or prophylactic agents. In our state, typhoid vaccine is given free to all registered physicians. We have been sending out annually for three years an average of 400,000 doses. We estimate that at least 100,000 citizens are immunized against typhoid fever each year. I believe in the free distribution of diphtheria antitoxin. It is only then that we can hope for its use in all cases of diphtheria.

Health Education in Rural Districts

DR. L. A. RISER, Columbia, S. C.: Two counties in South Carolina were this year induced to appropriate money through the legislature for a campaign for better health in their rural districts. Notwithstanding the phenomenal rise in the price and scarcity of labor and material in our state, we have been able to make a fair showing, and to stir up an enthusiasm for civic betterment along the line of disease prevention that will cause a demand on the part of the rural population in these counties for a continuation of this work next year. We have largely stressed the prevention of intestinal diseases by approved methods of sanitation, but we have also devoted a part of our work to the prevention of tuberculosis, and diseases of childhood. Lectures in schools, both negro and white, have been given in practically every community. In our county and community fairs we have had health exhibits, which have taught valuable lessons in disease prevention to thousands.

Relative Value of the Public Health Nurse in the Solution of the Tuberculosis Problem

DR. W. L. HEIZER, Frankfort, Ky.: The chief advantages of starting a health campaign in a county by employing competent public health nurses are: the natural inclination of a community to spend a smaller amount of money, a false economy, to accomplish a public service; the popular appeal to the public by the ministrations to the sick; the prenatal care in selected cases, and a quick appreciation of the value of public health work by reason of its publicity, secured as the result of appeals for aid to churches, fraternal organizations, and the city and county government. When a nurse is employed by a county health and welfare league, as is the policy of our commission, or a similar organization with a large county membership, it is a logical and certain means of crystallizing an awakened public health sentiment to the formation of a permanent county, city or state health department with efficient officers and sufficient equipment and assistance to make real work permanent, constructive and effective.

Physical Status of Juvenile Delinquents

DRS. ELIZABETH BASS and MAUD LOEBER, New Orleans: Many children who are sent to reformatories would make better men and women if even superficial attention were given to them before their commitment by a physician attached to the juvenile court, to be followed up in each instance, according to the opinion of the court, either by the child's natural or rightful guardian, or, should the court deem commitment proper, by the custodian of the municipal or state institution. Physical and clinical records should be kept of each child at the time of admission into the reformatory, and observations recorded once each month thereafter, or more frequently, should the case require it. Each reformatory attending physician should have as his assistants specialists in the various branches of medicine to treat cases needing attention in his specialty, and a resident trained nurse. The diet and mode of life in an institution should be passed on by that institution's attending physician.

DISCUSSION

DR. OSCAR DOWLING, Shreveport, La.: The prison system in vogue is an insult to our intelligence and a disgrace to our civilization, and there is no feature of the whole system more in need of reform than that which pertains to the juvenile criminal. Although not complete, there are sufficient data to show the close and intimate relation of mental states to abnormal physical conditions. That defects or bodily pain are the cause of actions often mistakenly called criminal is clear. Then, logically, the cause should be discovered and the remedy applied. Every court should take cognizance of pain or mental defect as a predisposing cause of crime. No jury would convict an insane person. Institutional life at its best is not an environment which gives ideal results, and for the physically defective cannot be other than trying in the extreme. I heartily approve the recommendations contained in the paper, each one of which is important and imperative. I believe they are practical and can be put into immediate effect wherever public opinion will make the demand. I believe full publicity as to the details of juvenile court proceedings and institutional life will stimulate public sentiment to the degree that the demand will be made.

Syphilis of the Heart and Aorta

DR. BRYCE W. FONTAINE, Memphis, Tenn.: The records of the Memphis General Hospital for the years 1916 and 1917, inclusive, show a total admission of 219 patients with cardiovascular disease. Disease of the cardiac valves heads the list with the occurrence of mitral insufficiency in 133 of the cases, and aortic insufficiency in twenty-four. Next in point of number were aneurysms of the aorta and the peripheral arteries, of which there were eighteen. Such a study showed in the cases of mitral disease thirty-seven, or 27.8 per cent., infected with syphilis; in the cases of aortic disease, eleven, or 45.8 per cent.; and in the cases of aneurysm, eleven, or 61.1 per cent. In every case of aortic insufficiency in a young adult, in addition to the physical and other examinations, there should be made a roentgenographic examination of the chest, for this may be the only means of differentiation from chronic aortitis or aneurysm.

(*To be continued*)

KENTUCKY STATE MEDICAL ASSOCIATION

Sixty-Seventh Annual Meeting, held at Louisville, Nov. 6-9, 1917

(*Concluded from page 2067*)

Acute Intestinal Obstruction

DR. GEORGE A. HENDON, Louisville: Any acute illness that is characterized by abdominal pain, shock and nausea, not associated with diarrhea, is sufficient evidence of intestinal obstruction to justify laparotomy. An estimate of the degree of pain is important. Any abdominal pain that cannot be quieted by a hypodermic administration of one-fourth grain of morphin in the adult and corresponding doses in children is always indicative of an organic lesion. To this rule I have never found a single exception. Such a case will sooner or later demand surgical intervention. Nausea that persists after normal stomach contents have been evacuated is never due to local conditions in the stomach. Such nausea is due either to pyloric spasms or reversed peristalsis. To produce either pyloric spasms or reversal of the peristaltic wave, an obstruction, either physiologic or mechanical, must exist. If associated with pain, such as mentioned above, the obstruction is always mechanical. The nausea of intestinal obstruction is characterized more by its persistence than by its severity. Sometimes the efforts of vomiting are mild and devoid of violent retching, but they are constant and uncontrollable. The vomited material consists first of undigested food, then mucus and bile, and later of intestinal contents. It is utterly inexcusable to wait for fecal vomit before making a diagnosis. Shock is a conspicuous symptom and is always present. The greater the degree of vascular involvement in the obstruction, the more profound is the shock.

DISCUSSION

DR. J. GARLAND SHERRILL, Louisville: Patients with intestinal obstruction die not so often of peritonitis due to the original trouble as from the absorption of the contents of the bowel. If we give such a patient purgatives, he will certainly die.

DR. A. D. WILLMOTH, Louisville: The conditions presented by Dr. Hendon are not due to infection but to the absorption of material within the intestine itself. The mucosa of the intestinal tract is not only a simple absorbing and secreting surface, but under certain conditions it has the power of manufacturing chemical agents that may destroy the patient's life rapidly unless some form of drainage is instituted.

DR. D. W. PAYNE, Bardwell: In the last year I have had three cases of acute intestinal obstruction in which the symptoms of abdominal pain, nausea and diarrhea were conspicuous by their absence.

Latency in Tuberculosis

DR. JOSEPHUS MARTIN, Cynthiana: There is often a period of latency in tuberculosis. Just in what percentage of cases and exactly how this comes about is not well established. Deaths from consumption are infrequent before the fifteenth year. The careful study of tuberculosis would indicate an attempt on the part of nature at the production of acquired immunity in this disease. This is the case in as high as 95 per cent. of children examined. Latent tuberculosis in children is often revealed by defects in development. The previously normal appearing child begins to grow thin and pale; the skin and muscles feel flabby, and the bones are inclined to soften and bend. The mind often develops precociously. Children with latent tuberculosis catch cold readily; eczema and pruritis are frequent, and there may be periods of difficulty in breathing, with or without bronchitis. Pains at different points are also instructive.

Surgical Management of Hypertrophy of the Prostate

DR. H. H. GRANT, Louisville: Early removal of the prostate in the first stage, with tumor and residual urine, is a wise step. In the second stage, when the urine has become foul, the prostate should be removed by the two-stage method as soon as the patient is in condition to bear surgery. In the first stage, when surgery is unsafe, suprapubic drainage will often make the patient comfortable. The shock of the perineal operation is far less and the subsequent convalescence much more rapid and comfortable than in the suprapubic method, but it should be reserved for the small prostate about the neck of the bladder and for those grave cases in which something must be done, in which the more trying operation is too dangerous. These patients are not to be allowed to drag along with a few antiseptics for the urine and various temporizing methods until the opportunity for security in surgery has passed.

DISCUSSION

DR. HERBERT BRONNER, Louisville: A class of cases the essayist did not mention is that class with nerve lesions. We not infrequently see patients who have hypertrophy of the prostate, but in whom the prostate is not palpable by rectum. Large sounds can be passed with ease. The cystoscope will reveal a trabeculation that is characteristic of nerve lesions.

DR. FRANK BOYD, Paducah: I wish to call attention to the danger of too rapid evacuation of a bladder that has long been under tension from overdistention. The better plan is to withdraw 10 ounces of urine at a time, gradually emptying the bladder in two or three days. In that way we overcome the tendency to rapid dilatation of the bladder wall.

Early Diagnosis and Treatment of Ectopic Gestation

DR. CHARLES A. VANCE, Lexington: Prompt operative intervention is imperatively demanded in every instance, regardless of the stage of the gestation when the patient comes under observation. In the presence of severe abdominal pain and shock, even when the diagnosis is uncertain, celiotomy is justifiable and may be a life-saving measure. Vaginal operations are not advised under any circumstances in the treatment of ectopic gestation. The primary object to be borne in mind is the safety of the mother. It is inadvisable to delay operation, hoping that the product of conception may be finally extruded through the tubal fimbriae without hemorrhage or shock, since it is impossible to determine in what portion of the tube impregnation has occurred.

Border Line Tonsils

DR. W. B. MCCLURE, Lexington: No matter how much the tonsil may be hypertrophied, or how much it apparently is diseased, unless there is a history of tonsillitis or quinsy, unless there are glandular enlargements about the neck or throat, unless there are constitutional symptoms of tonsillar origin, I unqualifiedly advise against their removal.

Celiohysterectomy for Puerperal Eclampsia and Placenta Praevia

DR. WOODSON H. TAULBEE, Maysville: I do not propose cesarean section in every case of eclampsia or in every case of placenta praevia, but there are definite indications which make this procedure not only justifiable but the safest to both mother and child. When immediate delivery is indicated, cesarean section is often the method of choice. Every patient with eclampsia and placenta praevia or concealed hemorrhage should be given the promptest treatment possible after the first convulsion or hemorrhage. Celiohysterectomy

is done rapidly; shock is greatly lessened; the control of hemorrhage is more complete; there are no cervical tears; there is less likelihood of infection; we are not working in the dark; delivery of the placenta is immediate; there is less likelihood of postpartum hemorrhage, and less danger of injury to the bladder; a living child is more certain and, if deemed necessary, the patient may be sterilized.

Treatment of Cardiac Disease by Measures Other than Drugs

DR. CURRAN POPE, Louisville: Rest is an essential feature of every method and every system of treatment of cardiac diseases. Physical rest may be obtained in many ways. In some cases rest may be obtained by simply diminishing the day's work and increasing the time of general physical rest. This form of rest is particularly valuable in ambulant cases with slight or moderate weakness of the myocardia. Psychic rest is almost as important as physical rest. As far as possible, the so-called "worries" should be removed. The vast majority of such worries are in reality irritations that can be removed readily by hospital residence. The management of the diet of these patients commences with cleanliness of the entire oral cavity. Mastication is essential, and this is best secured by having the patient take small mouthfuls of food, chewing it well. We diet our cardiac patients too much. One of the most valuable, as well as the simplest, hydrotherapeutic measures in the treatment of cardiac diseases is the precordial ice bag. The ordinary ice bag or cap may be used, and should be filled with small pieces of ice to which some ordinary coarse or rock salt has been added, in the proportion of one of salt to four of ice. Massage is a very practical and useful adjunct in the treatment of cardiac diseases and disorders. In bedridden cases, manual massage and vibration have been used successfully. The sinusoidal current is of considerable value in the treatment of cardiac diseases and disorders. It seems to be especially useful in myocardial disturbances. I employ an even, smooth, short wave without surging of any kind. It produces the most lasting impression.

NEW YORK NEUROLOGICAL SOCIETY

Regular Meeting, held Oct. 2, 1917

The President, DR. FREDERICK TILNEY, in the Chair

Cinematographic Records of War Neuroses

DR. FRANKWOOD E. WILLIAMS, Associate Medical Director of the National Committee for Mental Hygiene: Shortly after the declaration of war, the Surgeon-General created in his department a division of psychiatry to organize a neuropsychiatric service in the Army to meet the problem of war neuroses as it developed in the American forces. Dr. Pearce Bailey, chairman of the Mental Hygiene War Work Committee of the National Committee for Mental Hygiene, was given charge of the new division. The creation of this division of psychiatry represented the first attempt in any army to take into consideration the mental and nervous qualifications of recruits for military service.

The National Committee for Mental Hygiene then undertook to interest the neurologists and psychiatrists throughout the country in this work. The result was that whereas there were few medical officers in the Army at the time of the declaration of war who could be called psychiatrists or neurologists, there are now approximately 300 of these specialists commissioned in the Medical Reserve Corps. There have been, of course, many new problems before the division, but the work has divided itself largely into three parts: (1) the examination of recruits, (2) provision for the care of war neuroses in the expeditionary force, and (3) provision for the care of invalided soldiers returned to this country. Psychiatrists and neurologists are now detailed to each of the American camps, where they are examining the troops in a systematic way in order that those recruits will be eliminated who are found unfit for military service because of neuropathic or psychopathic conditions. No statistics are available at the present time, but it is estimated that from 1 to 2 per cent. are being eliminated.

In order that the cooperation of line officers might be obtained, a special report was prepared indicating those personality traits that frequently come to the attention of such officers and which are considered of possible psychiatric significance, and they are requested to refer those men to the specialists for examination.

Neuropsychopathic wards are being planned for the base hospitals at each of the sixteen cantonment camps. Three or more psychiatrists and a corps of specially trained attendants are to be detailed to each of these hospitals, which will be provided with adequate hydrotherapeutic and electrotherapeutic equipment. The plans for the expeditionary force called for thirty bed neuropsychiatric units with each base hospital and for a 500 bed special hospital for war neuroses. The latter will be staffed by nineteen medical officers, a corps of 150 nurses and male attendants, and a corps of specially trained reeducational workers. It is probable that eventually specialists from the base hospitals will be on duty at the casualty clearing stations so that a patient can be handled from these stations through the base hospital unit and, if necessary, through the special hospital for war neuroses.

War Shock, Its Occurrence and Symptoms

DR. T. H. AMES: From observation of chronic cases of war neuroses in convalescent hospitals in different parts of eastern Canada, I believe that a classification for the differential diagnosis of every case of nervousness developing at the front might be made in the following way: (1) Constitutional inferiority group, including the high grade morons and epileptics. (2) Psychoses, such as general paresis, dementia precox and manic depressive states. (3) Concussion, that is, organic injury to the brain or spinal cord, so that on physical examination disturbances in reflexes and in the spinal fluid were demonstrable. (4) War shock, or the functional cases which had no organic signs, either wounds from bullets or shrapnel, and showed no abnormal changes in reflexes. (5) Malingering, or deliberately feigned symptoms.

A rough estimate of cases of nervousness in all forms is about 3 per cent. of all the casualties, perhaps one half being cases of war shock.

It is interesting to study the types of men who suffered from these conditions. Throughout the war it had been a matter of continuous comment that prisoners of war and wounded men did not have war shock. All nervousness ceases instantly on being wounded, and war shock never develops in a sleeping man when a shell bursts near him. Crack regiments have fewer men coming down with war shock, as do old regiments with long traditions of pride. Among officers there is relatively a smaller percentage than among privates. One of the most striking features is the relatively small number of cases among woman nurses and civilians who are often exposed to shell fire.

The immediate exciting incident provoking the attack might be either a physical or an emotional shock. Being gassed, aeroplane raids, mine explosions, or anticipated mine explosions act as exciting causes. The emotional causes are apt to produce less sudden onset of symptoms; the factors are most frequently fear or suspense. The large percentage of cases, however, have their onset some time after the shock, some of the men coming out of unconsciousness and being for several days without any symptoms at all, then developing mutism, blindness, tremors, etc. Once the symptoms appear, they are apt to assume their maximum severity within twenty-four hours. As a rule, from the time the man was taken care of the symptoms began to abate, subsiding, in the majority of cases, one by one, at irregular intervals. Some of the symptoms that disappeared did so in a few moments' time; the use of the voice came back all at once, blindness disappeared almost instantaneously, as did paralysis, though the use of limbs that had been paralyzed might be slow and gradual. The cessation of tremors, however, had never been rapid. The course of the disease might be continuous or interrupted, exacerbations being quite common. The severity of the symptoms varied in many respects. Some were extremely severe and others very mild. Those cases which were monosymptomatic were apt to be more severe than

those with more than one symptom. The intensity of any symptom was in inverse proportion to its duration. The symptoms might be classified as psychical or physical. There was a third group involving the autonomic system, gastro-intestinal, cardiac, respiratory, secretory or excretory systems.

DISCUSSION

DR. JOHN T. MACCURDY: The prevalence of "shell shock" is not well known because no statistics have been published. Major Bailey showed that 12 per cent. of those invalided home to Canada suffered from neuroses and mental diseases, 58 per cent. of which had a diagnosis of "shell shock." The War Council of Great Britain gave Major Salmon statistics of all discharges from the British Army; one seventh of these were for mental and nervous troubles, of which the largest proportion were war neuroses.

War neuroses seem to be constant and simple in their type. In England, I visited seven or eight special hospitals for nervous cases and found that the physicians who did most for their patients and returned the most men to active duty classified their material into two groups, anxiety neuroses and the conversion hysterias. In the anxiety neuroses the symptoms were almost purely psychic, in contrast to the hysterias, where the symptoms were somatic. A further difference was found in that the anxiety cases occurred mostly among officers. In Scotland, in a 300 bed hospital for officers, they had only one example of anxiety neurosis with gait disturbance; the other 299 were cases with no somatic symptoms beyond occasional tremors of brief duration. The paraplegias, the blindness, the mutism, tics, etc., constituted the hysterias, and these occurred preponderantly among the private soldiers. Privates, as a rule, were comparatively ignorant men; they were not surprised to find a scratch on the shoulder resulting in paralysis of the arm, a sequence which an educated man would view with astonishment. This was one reason for the rarity of hysterias among officers, and corresponded to the experience in civilian practice, where functional palsies, etc., were rarely met with outside of dispensary practice. The onset of the anxiety condition was gradual and usually marked by fatigue. The hysterias, on the other hand, developed quickly. It was the anxiety neuroses that had the greater military significance. The officer who later developed an anxiety state passed through a latent period during which he felt more and more fear and struggled against it. It was impossible for a man putting forth 90 per cent. of his energy in smothering fear to encourage his men with the necessary abandon; consequently their neuroses led to the breaking up of the morale of their companies.

The treatment for the two groups is different. Hysterical symptoms are amenable to suggestion, hypnotism and reeducation, all of which efforts are successful with anxiety neuroses only to a limited degree.

The common soldier hoped to receive some wound, a "blighty" one, and when his neurosis appeared the symptoms assumed corresponding physical form: his sight went or the tics, paraplegias, etc., developed. The officer had higher ideals; he would not harbor the thought of being disabled; he did not want to get out of the war by any subterfuge, and so it came about that he developed a fear of death and fearful dreams of being killed began. When this occurred his sleep was disturbed by nightmares, and this aggravated his condition until it was only a question of time before he broke down. All these premonitory symptoms went on for some time and just how fast they developed to the point of incapacitation depended on circumstances. The soldier was waiting for some final precipitating factor which might be a purely psychic trauma or a physical accident such as concussion.

DR. CHARLES L. DANA: The disorders and symptoms described under the term "war shock" are not new. The grouping of the cases and classification corresponds to the groups of neuroses and psychoneuroses seen in civil life as the result of trauma and shock. The frequency, however, of different types and the combination of symptoms are different in war shock and civil shock cases. Thus, in civil life there are very few cases of hysterical mutism, deafness, or blindness, but plenty of tremor, paralysis and skin anesthesia. The group which the term neurasthenia covers better than "anxiety neuroses" seems to have much the same characters as the traumatic neurasthenias of civil life, where there are often types of mild depressions brought out by shock; neither war nor civilian shocks are often the real cause of the obsessive psychosis. The main measures to pursue in trying to prevent or to prepare individuals against shock are the avoidance of excessive fatigue and education against fear, measures which are rather councils of perfection. The ear and the body can, however, be educated to withstand the noise and concussion of cannon firing and shell explosion, as has been shown in the artillery branch of the army service, where soldiers, ignoring ear protectors, sleep peacefully in the gun pits of even the heavy artillery.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

November, XXII, No. 3

1 Early History of Germ Cells in Armadillo, Tatusia Novemcincta. A. S. Vanneman, Galveston, Texas.—p. 341.
2 Development of Serous Glands (von Ebner's) of Vallate Papillae in Man. E. A. Baumgartner, St. Louis.—p. 365.
3 Anatomy of Seven Months' Fetus Exhibiting Bilateral Absence of Ulna Accompanied by Monodactyly (and Also Diaphragmatic Hernia). J. C. Watt, Toronto.—p. 385.
4 *Normal Shape of Mammalian Red Blood Corpuscle. L. B. Arey, Chicago.—p. 439.
5 Seasonal Changes in Interstitial Cells of Testis in Woodchuck (Marmota Monax). A. T. Rasmussen, Ithaca, N. Y.—p. 475.

4. Shape of Mammalian Red Blood Corpuscles.—Arey is convinced that the shape of the mammalian red blood corpuscle depends largely on the osmotic pressure of the examining medium. In solutions corresponding to calcium 0.9 per cent. sodium chlorid the erythroplastid possesses a biconcave form. In progressively less concentrated (hypotonic) solutions water is imbibed and the corpuscles swell to thin-walled cups, thick-walled cups, dimpled spheres and finally lake forming shadows. In hypertonic media crenation results. Between the limits of form induced by a 0.3 per cent. sodium chlorid solution and by mild crenation the shape of the red corpuscles is repeatedly reversible. Individual variability exists in the response of erythroplastids to diluting media; this is perhaps referable to diverse elasticities of the corpuscular membranes. Undiluted drawn blood, and blood diluted with human serum, show the red corpuscles to be biconcave disks. Human serum must be diluted about one third with water before the cup form predominates. Freezing point determinations which show that mammalian plasma is isotonic with a 0.9 per cent. saline solution (instead of 0.6 per cent.) are roughly substantiated by such dilution experiments. The study of circulating blood in nonanesthetized living mammals corroborates the normality of the disk. The results gained by the use of fixatives, although seemingly adverse to the disk view, may be satisfactorily interpreted in terms of unequal fixation; this is supported by experiment. The several lines of evidence presented by Arey seem to justify the conclusion that the biconcave disk represents the normal shape of the mammalian erythroplastid—the concavoconvex cup being merely an occasional modification.

American Journal of Physiology, Baltimore

November, XLIV, No. 4

6 *Occurrence of Citric Acid in Urine. S. Amberg and W. B. McClure, Chicago.—p. 453.
7 Reception of Mechanical Stimuli by Skin, Lateral Line Organs and Ears in Fishes, Especially in Amiurus. G. H. Parker and A. P. Van Heusen.—p. 463.
8 Reversal of Reciprocal Inhibition in Earthworm. F. P. Knowlton and A. R. Moore, Woods Hole, Mass.—p. 490.
9 *Attempts to Produce Experimental Thyroid Hyperplasia. G. E. Burget, Urbana, Ill.—p. 492.

10 Relative Physiologic Value of Spectral Lights. H. Laurens and H. D. Hooker, Jr., New Haven, Conn.—p. 504.
11 All-Or-None Principle in Graded Response of Skeletal Muscle. F. H. Pratt, Buffalo.—p. 517.
12 *Alleged Relation of Epinephrin Secretion of Suprarenals to Certain Experimental Hyperglycemias. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 543.
13 *Is Death from High Temperature Due to Accumulation of Acid in Tissues? A. G. Mayer, Washington, D. C.—p. 581.
14 *Phenol Excretion of Guinea-Pigs. Maintained on Exclusive Oat Diet. W. G. Karr and H. B. Lewis, Urbana, Ill.—p. 586.
15 Formula for Rate or Nerve Conduction in Sea Water. A. G. Mayer, Washington, D. C.—p. 591.

6. **Occurrence of Citric Acid in Urine.**—With the intention of studying the fate of citric acid introduced in the organism by various routes and in various diseases, Amberg and McClure tested the applicability of the method of Kunz to the quantitative determination of citric acid in the urine and other body fluids. They found that citric acid is a normal constituent of the urine of infants, children and adults. Quite an appreciable amount of citric acid is excreted in the course of twenty-four hours, enough to play a modest rôle in the acid base economy of the organism. The amount excreted varied from 21 to 50 mg. per 100 c.c.

9. **Experimental Thyroid Hyperplasia.**—Adult rats kept under hygienic conditions and fed a high protein diet were found to develop hyperplasia of the thyroid gland. Rats kept under unhygienic conditions develop hyperplasia of the thyroid if given a standard diet of bread and milk. Unhygienic conditions plus a high protein diet bring about a higher degree of hyperplasia in the adult rat than either factor taken alone. Young, growing rats kept under hygienic conditions do not develop hyperplasia of the thyroid when given a high protein diet which will induce this condition in adult rats. Feces either from goiter patients or from goitrous dogs fail to induce any changes in the thyroid of the cat when given by stomach. The central end of the phrenic nerve when sutured to the peripheral end of the cervical sympathetic either does not form a physiologic anastomosis or, if formed, the stimuli thus carried are not efficient in increasing the output of thyroid secretion to the point of producing the pathologic changes accompanying exophthalmic goiter in man. Removal of a section of the cervical sympathetic cord produces no change in the thyroid gland in the cat, indicating that secretory fibers, if there are such fibers present, play no part in the normal mechanism of thyroid secretion.

12. **Epinephrin Secretion and Experimental Hyperglycemia.**—The relation of the epinephrin secretion of the suprarenals to experimental hyperglycemias can be investigated under much better conditions in animals whose epinephrin output has been abolished or greatly reduced by removal of one suprarenal and section of the nerves of the other, than in animals deprived of both suprarenals. For in the first case the animals, after recovery from the operation, remain indefinitely in good health, whereas after total suprarenalectomy observations on the blood sugar are complicated by the fact that they must be made: (*a*) practically on dying animals (unless survivors in species where accessory suprarenals are common are employed) and (*b*) on animals suffering from the immediate effects of a major operation and anesthetization. The hyperglycemia associated with asphyxia and ether anesthesia is obtained in cats which have undergone the suprarenal operation described, even when no detectable residual liberation of epinephrin is present. No essential difference could be made out by Stewart and Rogoff in this regard between these animals and control normal cats. Accordingly, the mobilization of sugar, of which these experimental hyperglycemias are the expression, is not mediated through the epinephrin secretion of the suprarenals. Such observations as the authors have made on the effect of fright do not support the view that so-called emotional hyperglycemia is a constant or even a common phenomenon in cats. If it exists, it does not depend on an increase in the epinephrin liberated from the suprarenals. For (*a*) no essential difference could be detected between the results of emotional disturbance on the blood sugar content in the cats whose epinephrin output had been interfered with, and in the control normal cats; (*b*) no evidence was obtained that emotional disturbance increases the output of epinephrin in normal cats.

13. **Cause of Death from High Temperature.**—Mayer's researches lead him to believe that death from high temperature may be due to the accumulation of acid (possibly H_2CO_3) in the tissues, the rate of formation of this acid being commensurate with the rate of metabolism of the tissues. Thus animals of the same class having a high rate of metabolism, as measured by oxygen consumption, are more sensitive to heat and to carbon dioxid than are those having a low rate of metabolism. Death at high temperature is not due to asphyxiation.

14. **Oat Diet and Phenol Excretion in Guinea-Pigs.**—In guinea-pigs on an oat diet no changes in the urinary elimination of phenols nor in the degree of conjugation of the phenols were observed, provided the factor of partial starvation was ruled out. This is believed to indicate that no increased bacterial action occurs in the intestine of scorbutic guinea-pigs despite the difficulty of evacuation of the feces.

American Journal of Public Health, Boston

November, VII, No. 11

16 Food Conservation and War. H. C. Hoover, Washington, D. C.—p. 922.
17 Navy and Its Health Problems. W. C. Braisted, Washington, D. C.—p. 928.
18 Health Problems of Army. W. C. Gorgas, Washington, D. C.—p. 937.
19 Preservation of Health of Soldier on Western Front. T. H. Goodwin, Washington, D. C.—p. 940.
20 Sewage Disposal Problems of Coast Summer Resort. W. E. Brown, Boston.—p. 944.
21 Hospital and Industrial Hygiene. W. Wright, Boston.—p. 949.
22 Milk Supervision and Its Control. J. A. Gamble, Washington, D. C.—p. 953.
23 Mosquito Growth in Catch Basins. J. W. M. Bunker, Boston.—p. 956.
24 New Ideas in Food Control. H. E. Barnard, Indianapolis.—p. 960.
25 Diagnosis of Syphilis from Specimens Sent to Laboratory. A. Gehrmann, Chicago.—p. 964.

American Review of Tuberculosis, Baltimore

November, I, No. 9

26 *Present Status of Induced Pneumothorax in Pulmonary Tuberculosis. W. N. Beggs, Denver.—p. 509.
27 *Deductions from Four and One-Half Years' Use of Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. C. L. Minor, Asheville, N. C.—p. 522.
28 Two Cases of Spontaneous Pneumothorax During Course of Induced Pneumothorax. M. I. Marshak and J. W. Craighead, Edgewater, Colo.—p. 540.
29 *Wassermann and Luetin Reactions in Tuberculosis. H. J. Corper, W. A. Gekler and H. C. Sweany, Chicago.—p. 544.
30 Relation of Fistula in Ano to Tubercle Infection. H. B. Stone, Baltimore.—p. 548.

26. **Present Status of Induced Pneumothorax.**—As the result of personal experience and a review of the literature Beggs would make the following summary: While the operation of induced pneumothorax per se is not a dangerous one, the practice of collapse therapy calls for special skill and judgment. Collapse therapy unquestionably restores to practical health many otherwise hopeless cases, and prolongs the lives and increases the comfort of many others. It is of positive influence in decreasing the period of incapacity. It should be used in all cases of recurrent, severe and protracted hemorrhage. It should be invoked, generally speaking, much earlier than is now the usual custom. In justice to the patient it should be considered in every case of advanced or moderately advanced, slowly progressive pulmonary tuberculosis, and in every case of actively progressive pulmonary tuberculosis in any stage, because the natural trend of all these is toward death. The constant tendency to diminution of the gas pocket by pleural contraction following exudation should be persistently combated by frequent refillings under positive pressure. Control by frequent roentgenographic and fluoroscopic examinations should be insisted on whenever at all possible.

27. **Artificial Pneumothorax in Treatment of Tuberculosis.**—In Minor's opinion the method is chiefly applicable to moderately advanced, or advanced chronic cases, with or

without acute exacerbations, but not to florid, acute cases, or to incipient ones, unless these show an acute waking up. It seems also that so far we have no definite guide as to the duration of the treatment, though after one year we should always consider the advisability of removing the gas and allowing the lung to reexpand. Minor is satisfied that many cases are kept collapsed too long. Further, it may at times be useful in cases of abscess of the lung, and in hemorrhage, if we can be sure of the lung from which the blood comes, it is one of the author's most valuable measures, granted no adhesions exist. The procedure is unquestionably very dangerous if carried out carelessly, or without the constant use of the manometer, but in careful hands the percentage of danger should be very small, and while the chief danger arises while giving the preliminary injection, air embolism and other dangerous complications can occur during the course of reinjections. Forlanini's advice that small amounts of gas be injected slowly and under low pressure should never be forgotten now in cases of hemorrhage.

29. **Wassermann and Luetin Reactions in Tuberculosis.**—Seventy-nine of a total of 170 negative Wassermann cases gave a positive luetin reaction, while only 18 out of a total of 28 positive Wassermann cases gave a positive reaction, justifing the conclusion that the luetin reaction cannot be used as a test for syphilis in a tuberculosis sanatorium to displace the Wassermann test.

Archives of Pediatrics, New York

October, XXXIV, No. 10

31 Clinical Manifestations of Poliomyelitis. E. K. Armstrong, Chicago.—p. 723.
32 Emotional Life of Child. C. P. Oberndorf, New York.—p. 747.
33 Osteogenesis Imperfecta (Osteopathyrosis, Fragilitas Ossium); Report of Two Cases. H. R. Mixsell, New York.—p. 756.
34 Significance of Certain Dental Stigmata of Congenital Syphilis. J. S. Wall, Washington, D. C.—p. 765.
35 *Case of Hemorrhagic Disease in New-Born Treated by Indirect Transfusion. J. H. M. Knox, Jr., Baltimore.—p. 771.
36 *Therapeutic Use of Blood Serum. R. G. Freeman, New York.—p. 773.
37 Intussusception, Its Early Recognition. H. Apfel, New York.—p. 781.

35. **Indirect Transfusion in Hemorrhagic Disease in New-Born.**—On the third day of life, Knox's patient nursed well at 9 a. m. and shortly afterward vomited a considerable amount of dark blood-stained fluid. There was no fever and no cough. When seen shortly afterward, the baby was found to be rather sallow, but vigorous. During examination the child passed from 3 to 5 ounces of tarry, blood-stained material, evidently a hemorrhage from the intestinal tract. There was no lesion about the anus. It was at once concluded that this was a case of melena, and transfusion from the mother was determined on. About 50 c.c. of the mother's blood was received into 60 c.c. of sodium citrate solution. With a syringe, about 15 c.c. of this was introduced in the longitudinal sinus and the rest in small quantities intramuscularly into the buttocks. From 12 noon to 3:30 a. m., when the transfusion was completed, the child passed three or four tarry stools, and was greatly blanched, pulse became thready and respiration shallow and the baby seemed about to die. With complete rest, however, the condition slowly improved through the night, and the following morning the child seemed much better. The following day the baby had one bloody discharge from the bowel, not accompanied by any change in pulse or rise in temperature. The material was darker than before and was probably part of the original hemorrhage. The child was hungry and the amount of milk was increased to 6 drams, every two hours. The following day the baby had two yellow stools with some mucus, and the color was further improved. She was given 1 ounce of milk at two-hour intervals during the night. From this time on the child made an uninterrupted recovery, and there was no further bleeding.

36. **Therapeutic Use of Blood Serum.**—A baby, 2 days old, had a movement which consisted of 1½ ounces of clotted blood. Three smaller movements of the same character had previously been passed. The child was pale and its condition critical. The father was fortunately accessible. A needle was passed into one of his veins and 6 ounces of blood removed; 15 c.c. of the blood serum was injected into the baby at 5 p. m. When the child was seen again at 9 p. m. no more blood had been passed and a second injection of 15 c.c. of blood serum was used. A movement the next day contained two small clots of blood, but it was evident from the time the first blood serum was injected that the bleeding had been entirely controlled. This baby went on to a normal development. Freeman also reports four cases in which horse serum was used to good advantage.

Arkansas Medical Society Journal, Little Rock

November, XIV, No. 6

38 Malignant Growths.. A. W. Hale, Nashville.—p. 119.
39 Intestinal Diverticula. L. Kirby, Harrison.—p. 122.
40 Croupous Pneumonia. B. H. Hawkins, Mena.—p. 124.

Boston Medical and Surgical Journal

November 22, CLXXVII, No. 21

41 Wounds of Knee Joint. B. Moynihan, Leeds, England.—p. 717.

November 29, No. 22

42 Method of Electrocardiography and Electrocardiogram in Health. H. B. Williams, New York.—p. 749.
43 Significance of Arrhythmias and Systolic Murmurs in Relation to Cardiac Efficiency. H. A. Christian, Boston.—p. 750.
44 Basis of Certain Changes in Electrocardiogram. A. E. Cohn, New York.—p. 753.
45 Acute Carditis. F. T. Fulton, Providence, R. I.—p. 756.
46 *Treatment of Pernicious Anemia—Especially by Transfusion and Splenectomy. G. R. Minot, Boston and R. I. Lee, Cambridge.—p. 761.

*

46. **Treatment of Pernicious Anemia by Transfusion and Splenectomy.**—Of the ninety-six cases of pernicious anemia studied by Minot and Lee, 115 observations may be used for the study of therapeutic procedures. The effect of two different procedures was observed in nineteen cases at times so remote from each other that there could be no confusion of their effects. Forty patients were treated either by no special therapy or by arsenic in some form, and represent "untreated" patients. There are suitable data for study of forty-six different patients transfused in one relapse of each case. Seventy transfusions were given, not counting the transfusions associated with or given at any time after splenectomy. Nineteen patients were splenectomized, with one operative death in a case with a red count below 1,000,000. Ten patients were treated by exposure of the spleen to the roentgen rays. There was, inside of a few weeks, definite improvement beyond a simple filling up with transfused blood in about 50 per cent. of the forty-six patients that were transfused. Very slight improvement occurred in about 13 per cent. more, so that about 63 per cent. of the transfused patients showed at least some improvement beyond that due to the volume of transfused blood; while 84 per cent. of the nineteen splenectomized patients showed definite improvement following the operation. The degree of the improvements following transfusion or splenectomy averaged greater than the improvements in the "untreated" patients. In a time proportionate to that in which the transfused and splenectomized patients showed definite or slight improvement, only about 35 to 40 per cent. of the forty untreated patients showed any improvement at all, though about 80 per cent. of any pernicious anemia patients at some time in their course show some definite improvement. There is no conclusive evidence that the duration of the improvements or clear-cut remissions are any longer in the transfused and splenectomized patients than in the untreated ones. However, there were but 7.5 per cent. of the untreated patients that showed such marked and rapid gains in the same period of time (about a month) as 30 per cent. of the splenectomized and transfused patients did (18 per cent. of the transfused and 46+ per cent. of the splenectomized). The untreated patients formed a similar number of the different types of the disease as those splenectomized and transfused, except that all four cases of the acute type occurred in the transfused group. It is to be noted that the transfused group contained more unfavorable cases than the untreated group, and that ten of the transfused patients died within a month, while but four of the untreated patients did so.

Journal of Cutaneous Diseases, Chicago

November, XXXV, No. 9

47 Teaching of Syphilis. J. A. Fordyce, New York.—p. 717.
48 Teaching of Syphilis in School and Hospital. C. M. Smith, Boston. —p. 726.
49 Teaching of Syphilis in Undergraduate Schools. W. J. Heimann, New York.—p. 723.
50 Classification of Urticarias. R. L. Sutton, Kansas City, Mo.—p. 749.
51 Late Urticaria Pigmentosa, or Urticaria Pigmentosa Beginning After Puberty. M. B. Hartzell, Philadelphia.—p. 756.

Journal of Experimental Medicine, Baltimore

December, XXVI, No. 6

52 *Petroff's Cultural Method for Isolation of Tubercle Bacilli from Sputum and Its Application to Examination of Milk. F. C. Stewart, New Haven, Conn.—p. 755.
53 Biologic Identity of Friedländer Bacillus. C. B. Coulter, New York.—p. 763.
54 *Effect of Alcohol on Reproductive Tissues. A. H. Arlitt and H. G. Wells, Chicago.—p. 769.
55 Meningitis in an Infant Due to Hitherto Undescribed Organism, Micrococcus Florens. W. C. Davison, A. S. Davison and M. K. Miller, Baltimore.—p. 779.
56 *Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. Influence of Splenectomy and of Blood Disintegration on Production of Bile Pigment. K. Goto, Philadelphia.—p. 795.
57 Staggers in Sheep in Patagonia. F. S. Jones and J. F. Arnold, Princeton, N. J.—p. 805.
58 *Diversion of Pancreatic Juice from Duodenum into Stomach. Its Effects on Level of Gastric Acidity and on Pancreas. E. G. Grey, Baltimore.—p. 825.
59 Abiotic Action of Ultraviolet Light. H. S. Newcomer, Philadelphia. —p. 841.
60 *Changes in Peripheral Blood Consequent on Diversion of Splenic Blood into General Circulation. W. C. Burket, Baltimore.—p. 849.
61 Identity of Toxins of Different Strains of Bacillus Welchii and Factors Influencing Their Production in Vitro. C. G. Bull and I. W. Pritchett, New York.—p. 867.

52. **Isolation of Tubercle Bacilli.**—Tubercle bacilli were isolated by Stewart by the Petroff method from 64.8 per cent. of the sputums which were found to be positive by the direct microscopic method. The organism was recovered from 69.2 per cent. of the samples of milk that were artificially infected. Of the milk obtained through the New Haven Health Department Laboratory 8.4 per cent. of the samples were found to contain tubercle bacilli, while none of the twenty-nine samples from the state laboratory gave positive cultures. All the guinea-pigs (thirteen), except one, which were used as control animals died without any visible signs of tuberculosis. Stewart concludes that Petroff's method for the isolation of tubercle bacilli from sputum may be applied successfully to the examination of milk. With slight modifications, the method should prove constant and reliable. The need of such a method for the examination of milk and milk products is apparent.

54. **Effect of Alcohol on Reproductive Tissues.**—Arlitt and Wells found that the administration of alcohol in the food of male white rats for two or more months, in daily quantities of 0.25 to 2.25 c.c., results almost constantly in the appearance of marked degenerative alterations in the testicles. These changes affect the steps of spermatogenesis in inverse order to their occurrence, so that for some time before sterility and complete aspermia result the animal is producing spermatozoa with all possible degrees of abnormality and deficiency. The possible relation of this abnormal spermatogenesis to the production of defective offspring is obvious. Individual rats show marked differences in the degree of change produced by equal amounts of alcohol. The fibrous, interstitial, and vascular elements of the testicle are not affected, except for intertubular edema compensating for tubular atrophy. These experimental observations harmonize with the necropsy findings in human alcoholics. No other tissue was found to be noticeably affected by the alcohol; especially to be marked is the absence of cirrhosis of fatty infiltration in the liver.

56. **Blood Destruction and Regeneration in Hemolytic Jaundice.**—In four animals with a bile duct ureter anastomosis and without disturbance due to obstruction or absorption, the total quantity of bile pigment output during a day under normal conditions varied from 0.0618 to 0.0678 gm. These figures are practically identical with those of Stadelmann (9, 10) but lower than those given by Hooper and Whipple (7), who find that the average bile pigment excretion amounts to about 1 mg. per pound of body weight per 6 hours. In all of Goto's experiments there is definite evidence of a decrease in bile pigment elimination after splenectomy. This is true not only of the elimination when no hemolytic agent is administered, but also when excessive blood destruction is caused. Under the latter circumstances the amount of bile pigment is greatly increased, but never reaches the high level of blood destruction before splenectomy. These observations appear to show conclusively that the absence of the spleen influences the formation of bile pigment. To what extent the influence is mechanical (that is, change in the course of the blood to the liver) and to what extent due to anemia, cannot be stated at present.

58. **Diversion of Pancreatic Juice.**—From the results of Grey's experiments it appears that the presence of a considerable amount of pancreatic juice in the stomach throughout the period of digestion leads only to a moderate decrease in the acidity level of the ingesta in the later stages of digestion. Earlier in the process there is no constant alteration of the acidity level in either direction. The findings, then, serve not only to corroborate the views of Boldyreff, but also to demonstrate the remarkable compensatory activity of the gastric glands under conditions which entail an unusual quantity of alkali in the stomach. In addition the work has shown that when the larger pancreatic duct is properly transplanted into the wall of the stomach, it may remain patent for months. In animals in which this operative procedure has been carried out, the pancreas has been found to undergo no inflammatory or other degenerative changes. This finding is regarded as evidence against the postulation of Hlava that gastric juice is probably responsible for the occurrence of certain cases of acute hemorrhagic pancreatitis.

60. **Diversion of Splenic Blood.**—The splenoreal venous anastomosis made by Burket offered a simple and satisfactory method of diverting the splenic blood into the general circulation because it was easy and produced no gross abnormal intra-abdominal changes, and the vessels normally lay parallel to each other and were readily approximated without tension. The operation was successful in every case. The animals did very well after operation and were healthy and active. No noteworthy histologic changes were observed in any of the organs or tissues. There was no essential change in bile production that could be detected by jaundice. The urine and stools showed no changes.

Journal of Laboratory and Clinical Medicine, St. Louis

November, III, No. 2

62 Investigation of Chemical Composition and Biologic Availability of Peptone. L. Davis, Detroit.—p. 75.
63 Tentative Explanation of Mechanism of Hemolysis Associated with Loss of Water and Bearing of Phenomenon on Certain Biologic Problems. C. C. Guthrie, Pittsburgh.—p. 87.
64 *Studies on Cholesterol. Influence of Bile Derivatives in Bloor's Cholesterol Determination. G. Luden, Rochester, Minn.—p. 93.
65 Value of Calcium Sulphid in Treatment of Poisoning by Mercuric Chlorid. C. C. Haskell and R. H. Courtney, Richmond, Va.—p. 110.
66 *Etiology of Arteriosclerosis. L. M. Warfield, Milwaukee.—p. 115.
67 Modified Wassermann Technic Based on Rapid Fixation of Complement Present in Human Serum. C. J. Bartlett and A. L. O'Shansky, New Haven, Conn.—p. 118.
68 Measurement of Spinal Puncture Needle. A. Levinson, Chicago. —p. 127.
69 Device for Accurate Pipetting. L. R. Thompson, Napa, Calif.—p. 130.
70 An Inexpensive Colorimeter. J. W. Weir, Oklahoma City.—p. 132.

64. **Studies on Cholesterol.**—In 748 parallel blood cholesterol determinations made by Luden according to Bloor's original method, with sodium ethylate, and Bloor's modification of his method, without sodium ethylate, a constant difference could be observed in the cholesterol values obtained by both methods, lower values being registered by the tests with sodium than by those without. This difference was found to be most pronounced in samples of icteric blood obtained from cases of obstructive jaundice, but a constant slight

difference, ranging from 0.05 mg. to 0.07 mg. could be observed also in normal blood. Luden's observations suggest that parallel cholesterol determinations with Bloor's original method and its modification might furnish valuable information concerning the chemistry of the blood, particularly in cases of biliary disturbance without visible symptoms of icterus, as Bloor's method is extremely simple and could easily be supplemented if desired by the dialyzation method of Hoover and Blankenhorn.

66. **Etiology of Arteriosclerosis.**—Five hundred persons were examined by Warfield for the purpose of showing that the infectious diseases played an important part in the production of arteriosclerosis, but the results of this study showed that they play little or no part in the etiology of this condition.

Laryngoscope, St. Louis

November, XXVII, No. 11

71 Vincent's Angina. T. Hubbard, Toledo, Ohio.—p. 789.
72 Three Cases of Stricture of Esophagus Due to Accidental Swallowing of Concentrated Lye Solutions. C. J. Imperatori, New York. —p. 796.
73 New Iodin Preparation "Iodosan." M. D. Lederman, New York. —p. 800.
74 Tonsillectomy in Tuberculous. F. L. Dennis, Colorado Springs, Colo.—p. 805.
75 Complete Unilateral Deafness Resulting from Acute Parotitis; Report of Case. G. H. Willcutt, San Francisco.—p. 811.
76 Pneumococcic Meningitis Following Acute Suppurative Otitis Media. J. Clothier, Pocatello, Idaho.—p. 813.
77 Device or Artificial Ear Drum for Use in Impaired Hearing and for Prevention of Concussion Deafness. E. Baum, Philadelphia. —p. 815.

Medical Record, New York

December 1, XCII, No. 22

78 Probing the Mind. Normal and Abnormal. J. V. Haberman, New York.—p. 927.
79 Malignancy of Biliary Apparatus. W. G. Vincent, New York.—p. 933.
80 Some of Newer Methods of Treating Wounds. F. C. E. Mattison, Pasadena, Calif.—p. 937.
81 Cesarean Section for Eclampsia in Twin Pregnancy; Saving Mother and Both Children. A. Schachner, Louisville, Ky.—p. 941.
82 Blood in Stools in Duodenal Ulcer. A. J. P. Pacini, New York. —p. 942.
83 Henoch's Purpura. M. B. Wesson, El Paso, Texas.—p. 943.

December 8, No. 23

84 Psychical Changes Observed in Pulmonary Tuberculosis and Its Relation to Insanity. S. A. Silk, Washington, D. C.—p. 969.
85 Obstetric Fads and Heresies. E. H. Grandin, New York.—p. 980.
86 Simple Method of Forming Original Mental Associations. E. Preble, New York.—p. 982.
87 Complications of Mastoiditis. J. M. Smith, New York.—p. 983.
88 Differential History Form for Enlargements of Thyroid. F. Christopher, Evanston, Ill.—p. 985.
89 Acute Diabetes Mellitus. E. O. Elmer, Hartford, Conn.—p. 987.
90 Standard for Exemption of Tuberculous Recruits from National Army. M. J. Fine, Newark, N. J.—p. 988.

Medicine and Surgery, St. Louis

November, I, No. 9

91 *Heart Block in Acute Rheumatic Pericarditis; Report of Cases. H. A. Christian, Boston.—p. 911.
92 Myocardial Degenerations and Their Treatment. A. E. Roussel, Philadelphia.—p. 921.
93 Diagnosis and Prognosis of Heart Disease. R. H. Babcock, Chicago.—p. 931.
94 Complement Fixation Test in Tuberculosis. R. B. H. Gradwohl, St. Louis.—p. 937.
95 Pulmonary Syphilis. M. F. Morris, Jr., Chelsea, Mass.—p. 949.
96 Prognosis and Treatment of Pulmonary Tuberculosis. J. Dworetzky and M. G. Milan, Otisville, N. Y.—p. 959.
97 Lesions of Chest Most Frequently Mistaken for Pulmonary Tuberculosis. M. I. Marshak, Edgewater, Colo.—p. 969.
98 *Relative Value of Five Diagnostic Procedures in Four Hundred Consecutive Cases Investigated by Group Study Method for Pulmonary Tuberculosis. R. L. Ochsner, San Francisco.—p. 975.
99 Angina Pectoris. D. Rochester, Buffalo.—p. 982.
100 Pulmonary Area, or Region of Romance. R. Abrahams, New York.—p. 993.

91. **Heart Block in Acute Rheumatic Pericarditis.**—In Christian's experience heart block has been relatively quite frequent in one type of rheumatic cases, namely, where with or shortly following acute articular disturbances the patient develops the typical physical signs of acute pericarditis. In sixteen consecutive cases of this type, heart block has been demonstrated in five and possibly may have been present in a sixth in whom irregularity of pulse was felt. Christian fears that it may have been overlooked in some of the others, though in all but two electrocardiograms were made. Still, block may have occurred on other days than those when electrocardiograms were taken and suggestive evidence of it not be found by detecting any irregularity in the pulse. After all, as the condition is transitory, it is remarkable that it was detected as often as it was in this group. The part played by digitalis in this group is not certain. In one case with block no digitalis was given; in others digitalis did not seem always closely related to the occurrence of the block. In four patients in whom block was not demonstrated digitalis was used, in one case in fairly large amount. From what Christian has seen in the use of digitalis in other cardiac cases, digitalis would not seem to be the chief cause of the heart block in this group. Probably, however, with a rheumatic lesion in the conduction system digitalis has had an added effect on it and led to block where without it block would not have occurred. In this sense digitalis may have been a contributory factor in the occurrence of block. The frequent occurrence of partial heart block in these cases of rheumatic pericarditis emphasizes further the extent of the involvement of the heart in rheumatism and justifies the caution in allowing the patient convalescing from rheumatism to exercise. In Christian's cases the block has not appeared to have influenced in any way the clinical course of the patients' disease. All but one of the patients recovered and a fatal case was one in the group not showing block.

98. **Group Study Method for Pulmonary Tuberculosis.**—Two years ago, the diagnostic section of St. Luke's Hospital, San Francisco, established a method of clinical investigation different from any system hitherto recorded. This difference lay in the extensiveness and completeness of examination as well as in the carefulness and completeness of its records. The method agreed on is as follows: Patients who are chronically ill (average, two years and a half), who have shown no tendency toward spontaneous recovery, are sent to the hospital by their own physicians for investigation. They are then examined by twelve clinicians representing the following departments: pathology, bacteriology, roentgenology, eye, ear, nose and throat, cardiovascular diseases, respiratory diseases, gastro-enterology, urologic surgery, neurology, orthopedic surgery, general surgery and general medicine. Thus each clinician examines each case, whether or not it falls symptomatically into his department. Furthermore, he makes a written report of his findings. The members of the section meet formally each day to discuss the case until all are satisfied with the conclusions. Through the correlation of each clinician's findings, cases are carefully culled and diagnosis is narrowed down to the fewest possibilities; also, in ruling out symptomatology which simulates tuberculosis, the respiratory clinician has been so greatly assisted by the findings of the other departments that he states with conviction his conclusions as found in this paper, for his findings are not that of one man but of one plus eleven others. From the data thus collected, the respiratory clinician presents the diagnostic results of 400 cases examined serially by the group, setting forth the value of the history, physical examination, tuberculin tests, laboratory and roentgen rays reports in coming to a conclusion for or against pulmonary tuberculosis.

It seems that the physical examination gives the most reliable information and for this reason more and more time is now being given to this part of the investigation, an hour often being spent in examination of the chest; the history is of next importance and should be checked carefully and repeatedly, since often at first the questions are misunderstood or their importance is not apparent; the tuberculin reactions can be relied on in only two thirds of the positive cases and in 96 per cent. of the negative cases. The roentgen ray gives no positive evidence in nearly 50 per cent. of the cases, gives less positive evidence than the tuberculin test, and is of no value except in a negative sense, until extensive pathologic changes have taken place, this occurring in most cases long after the symptomatology and physical examination are well marked. The examination of the sputum from the pathologic standpoint is positive only about once in ten

times, and too often this pathologic conclusion gives the attending physician a feeling of false security that the case is negative, much valuable time for the patient thus being lost.

New York Medical Journal

December 1, CVI, No. 22

101 Surgical Treatment of Wounded Men at Advanced Units. H. M. W. Gray, Aberdeen, Scotland.—p. 1013.
102 Manual Treatment of Cervical Sympathetic. E. F. Cyriax, London. —p. 1021.
103 Case of Pontine Syndrome. M. Osnato, New York.—p. 1026.
104 Effect of Accidental Instillation of Stock Solution of Corrosive Sublimate into Conjunctival Sac; Report of Case. A. Brav, Philadelphia.—p. 1027.
105 Death in Tabes Dorsalis. M. Grossman, New York.—p. 1029.
106 Wassermann Complement Fixation Test for Syphilis. J. W. Smith, Jr., New York.—p. 1030.
107 Hyoscin and Apormorphin; Prompt Emergency Hypnotic. C. J. Douglas, Boston.—p. 1032.
108 Physical Training and Hygiene for Busy People. L. F. Fuld, New York.—p. 1032.

South Carolina Medical Association Journal, Greenville

November, XIII, No. 11

109 Value of Thorough Roentgen-Ray Examination in All Injuries; Roentgen Ray in Military Surgery. W. F. Ashmore, Anderson. —p. 725.
110 Hydrotherapeutic Hints Boiled Down for General Practitioner. W. W. Blackman, Atlanta.—p. 727.
111 Ectopic Pregnancy. J. C. Harris, Anderson.—p. 730.
112 Autoserum in Arthritis as Used by Author. W. R. Barron, Columbia.—p. 735.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

November, XXV, No. 11

113 Extra Pleural Collapse of Tuberculous Lung in Hopeless Case. M. O. Shivers, Colorado Springs, Colo.—p. 272.

Texas State Journal of Medicine, Fort Worth

November, XIII, No. 7

114 Tuberculin as Diagnostic Agent. S. von Ruck, Asheville, N. C.—p. 237.
115 Home Treatment vs. Sanatorium Treatment for Tuberculosis; Observations on Climate. W. O. Wilkes, Waco.—p. 242.
116 Early Diagnosis of Pulmonary Tuberculosis by Physical Signs. I. S. Kahn, San Antonio.—p. 246.
117 Diagnosis and Prevention of Syphilitic Nerve Lesions. I. L. McGlasson, Waco.—p. 248.
118 Tonsils as Portal of Infection in Poliomyelitis. J. M. Woodson, Temple.—p. 251.
119 Is There a Paratonsillar Gland? H. B. Decherd, Dallas.—p. 253.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

October, V, No. 18

1 Methods and Results of Transplantation of Bone in Repair of Defects Caused by Injury or Disease. E. W. H. Groves.—p. 185.
2 *Case of Diffuse Traumatic Aneurysm in Surgical Neck of Humerus. R. L. Knaggs.—p. 243.
3 Gunshot Wounds of Kidney and Ureter as Seen at Base. A. Fullerton.—p. 248.
4 Bullet Marks on Skin of Abdominal Wall; Note on Question of Heat Retained by Spent Bullet. G. H. Makins and Pinches. —p. 289.
5 *Pathology of Projectile Fracture of Bones of the Extremities. E. K. Martin and G. F. Petrie.—p. 292.
6 Case of Peptic Ulcer Opening into Transverse Colon. G. Barling. —p. 343.
7 *Case in which Markings of Nutrient Canals of Ilium were Mistaken for Fracture. A. K. Smith-Shand.—p. 346.

2. **Diffuse Traumatic Aneurysm in Surgical Neck of Humerus.**—In Knaggs' case a bullet had passed through the surgical neck of the left humerus. The wound of entry was behind the shoulder over the posterior fibers of the deltoid, and the bullet had passed out through the center of the upper part of the biceps. Both wounds were healthy, and apparently superficial, when the patient was admitted. About four weeks later the man had a bad night owing to a great deal of pain in the shoulder, and the next morning pulsation was first detected about an inch above the exit wound. Examination showed that the upper part of the shaft was considerably enlarged, and that this enlargement was the subject of expansile pulsation. The main artery was normal as it coursed over the internal aspect of the swelling. No bruit could be made out, and there was no thrill. The roentgenogram showed a large irregular aperture in the surgical neck, with comminution of the internal surface, the fragments being displaced as if they had been forced outward by the explosive effect of the bullet. Ten days later an enlarged gland was noticed in the supraclavicular fossa. The general swelling of the shoulder that had followed the wound had now completely subsided, and the increasing expansion of the bone showed as a definite rounded tumor about the size of a cricket ball, altering the normal contour of the limb. There was a general agreement in a diagnosis of rapidly growing endosteal sarcoma but at the operation nothing was seen that looked like tumor tissue. A mass of black clot was evacuated. This was followed by very free arterial bleeding, and the cavity was at once firmly packed. After weighing the pros and cons in the case an interscapulothoracic amputation was performed by Littlewood's method, that is, from behind. A rapid recovery followed. Knaggs says that there can be no doubt that this was an instance of a traumatic aneurysm occurring in the interior of the humerus, and that it probably ruptured and became diffused when the patient suffered for the first time since his admission with severe pain in the shoulder.

5. **Projectile Fracture of Bones of Extremities.**—The authors summarize their observations as follows: From the surface of a divided or fractured bone exposed to infection, bacteria may penetrate to the deeper parts. In an untreated fracture, penetration is apparently unlimited. If the dead bone on the surface of the fracture is removed early, penetration is much reduced, and may not occur at all. Penetration, particularly of anaerobes, is greatly increased by reduction of the circulation through the injured bone. Penetration is increased by obstruction to drainage, either of the bone or of the soft parts. The order of frequency and power of penetration of the bacteria found is: (1) streptococcus; (2) staphylococcus; (3) anaerobes; (4) *B. coli*. The rate of penetration is at its maximum during the first few days. In the material examined, no difference in reaction to penetration has been noted between cancellous bone and the marrow of the shaft. Bruising—an invariable accompaniment of projectile fracture—does not appear to facilitate penetration if the surface layer of débris is removed and drainage established. In a septic fissure, growth of bacteria is progressive and may lead to infection of a distant part, for example, a joint. Dissemination of infection throughout a bone takes place by penetration from its walls.

7. **Normal Markings Mistaken for Fracture.**—This case is of interest in demonstrating that it is possible to mistake an unusually large nutrient artery in the ilium for a fracture of that bone; further, it brings out the fact that the nutrient arteries of the ilium, whatever their point of entry, invariably converge to a common meeting point which may be considered the true primary center of ossification of that bone.

British Medical Journal, London

November 10, II, No. 2967

8 Misplaced and Missing Organs. J. B. Sutton.—p. 607.
9 *Microscopic Examination of Brains of Two Men Dead of Commotio Cerebri (Shell Shock) without Visible External Injury. F. W. Mott.—p. 612.
10 Pathologic Findings in Nerves Following War Injuries. S. M. Cone.—p. 615.
11 Three Cases of Melena Neonatorum Successfully Treated by Injection of Whole Blood or Blood Serum. R. Hutchison.—p. 617.

November 17, II, No. 2968

12 Medicine in England During the Reign of George III. A. Chaplin. —p. 637. To be continued.
13 *Relative Germicidal Efficiency of Antiseptics of Chlorin Group and Acriflavine and Other Dyes. H. D. Dakin and E. K. Dunham. —p. 641.
14 *Detection and Treatment with Emetin Bismuth Iodid of Amebic Dysentery Carriers among Cases of Irritable Heart. M. W. Jepps and J. C. Meakins.—p. 645.
15 Spontaneous Evacuation of Shrapnel Bullet in Lung by Expectoration. R. M. Leslie.—p. 648.

9. **Cause of Death from Shell Shock.**—This is said to be the first description that has been given which serves to

explain (1) sudden death in shell shock, and (2) the clinical symptoms which persist for some time after the commotion of the brain in nonfatal cases. The brain was extremely congested, and on each side of every superficial vessel there was an ecchymosis. There were a number of minute punctiform hemorrhages at the terminations of the smallest vessels on the surface of the brain. The whole brain was soft but not markedly edematous. The cerebrospinal fluid appeared to be blood tinged. There was considerable ecchymosis on each side of the great sinuses of the skull. There was no large hemorrhage found and no small intracerebral petechiae. There was no gross lesion of the viscera, which would have been a cause of death.

13. **Germicidal Efficiency of Certain Antiseptics.**—The main facts disclosed by Dakin and Dunham's series of experiments are as follows: (*a*) The rapid and complete disinfection brought about by solutions (one volume) of members of the chlorin group of antiseptics of the strength commonly used in the treatment of wounds, when added to heavily infected blood serum muscle extract mixture (two volumes). (*b*) Under similar circumstances, solutions of acriflavine, proflavine, brilliant green and malachite green failed to sterilize in six hours mixtures which the chlorin antiseptics sterilized completely in five minutes or less. The authors believe that the statements of Browning and his colleagues as to the relative germicidal efficiency of chloramin-T and other antiseptics of the chlorin group compared with brilliant green, malachite green, and acriflavine, are incorrect, and that their mode of testing the germicidal action of the substances studied by them leads to results which are radically misleading.

14. **Detection of Amebic Dysentery Carriers.**—Emetin bismuth iodid when given in a powder generally causes nausea and vomiting. In order to overcome these conditions three preparations of the drug were tried by Jepps and Meakins. These were experimental preparations made by three different firms, and were submitted to the authors for trial. They were all in tablet or pill form, and were either mixed or coated with some material supposedly insoluble in the stomach. In all, twenty-three courses of treatment were given with these preparations. In no case was nausea or vomiting produced, but in eight cases (35 per cent.) severe diarrhea and abdominal cramps occurred. Some looseness of the bowels was observed in all cases in which the drug appeared to have any action. Different measures of success were obtained with these different preparations. With the first preparation there were eight cures out of twelve patients treated, or 66 per cent. With the second there were no cures, while with the third there was only one cured out of four patients treated, or 25 per cent. Of the three preparations, the first was the only one which gave sufficiently good results to justify its use in preference to the drug given in powder. But even the proportion of cures with this preparation is not sufficiently high to warrant its general use. The objection to the use of emetin bismuth iodid in powder, given in a cachet or capsule, has been the occurrence of nausea and vomiting. The authors have treated eleven patients with cachets, and these symptoms occurred in all of them. The drug was given with a hot drink at 9 p. m., after the patient was in bed. The time of the vomiting after the drug was taken varied in different individuals.

It is evident that the nausea and vomiting occurs most frequently after the stomach is presumably empty. These symptoms fortunately did not persist during the whole course of treatment. The toxic symptoms disappeared after a time as if a tolerance had developed. Eleven cases were treated with emetin bismuth iodid in cachets of 3 grains each. Ten cases (91 per cent.) were cured after twelve daily doses. One patient who was not cured had previously resisted three courses with the first preparation. The results obtained with the drug administered by this method are much more encouraging than those obtained with any of the other preparations. All the patients treated were suffering from symptoms of irritable heart. Any possible effects of the removal of the *E. histolytica* infection on the symptoms of this condition were carefully looked for. Of the twenty cases which were cured, eleven (55 per cent.) showed a conspicuous improvement, while nine (45 per cent.) showed little or none. The degree of improvement was determined by their increased ability to perform graduated exercises without untoward symptoms. Patients who, before treatment, showed severe symptoms after performing mild exercises could afterward accomplish the more advanced exercises with comparative ease. This confirms the previous conclusion that the removal of a coexisting infection may lead to the alleviation of symptoms of irritable heart.

Medical Journal of Australia, Sydney

October 27, II, No. 17

16 Parasyphilis. R. H. Marten.—p. 349.
17 Acute Encephalitis of Unknown Origin. T. H. R. Mathewson and O. Latham.—p. 352.

November 3, No. 18

18 Recent Advancement in Physiologic and Biochemical Technic. W. A. Osborne.—p. 369.
19 Study of Heart Disease. A. Lewers.—p. 371.
20 Experimental Study of Fever. J. L. Jona.—p. 373.

Archives des Maladies du Cœur, etc., Paris

October, X, No. 10, pp. 449-512

21 *Asynchronism of the Auricular Systoles. G. Etienne and J. Mondelange.—p. 449.
22 *Indications and Contraindications for Intravenous Injection of Strophanthus Derivatives. H. Vaquez and R. Lutembacher.—p. 461.
23 The Blood Changes in the Toxic Jaundice of Women Workers on Munitions in England. Wybauw.—p. 492.

21. **The Interauricular Interval.**—Etienne and Mondelange have been studying with cardiography the asynchronism between the auricle systoles. Their eighteen tracings confirm conclusively the interauricular interval in man as it has been established in the horse and dog. The cardiogram gives more correct findings in this matter than the electrocardiogram; it demonstrates that the effectual systole of the right auricle precedes the left systole.

22. **Strophanthus Derivatives.**—Vaquez and Lutembacher report extensive clinical study of the indications and contraindications for intravenous injection of strophanthus derivatives and of ouabain in particular. The latter is a very potent drug, but when used wrongly is dangerous; fatalities have been known to follow its use. Twelve clinical cases are described in detail with the tracings.

Archives de Médecine et de Pharm. Militaires, Paris

January, LXVII, No. 1, pp. 1-156

24 *War Fractures with Displacement of Bone. E. Delorme.—p. 1. Concluded in No. 2, p. 157.
25 *Antiseptics Specific for Certain Bacteria. K. Taylor.—p. 48.
26 War Wounds of the Skull. H. Bichelonne.—p. 61.
27 Shell Shock. G. Dumas and Delmas.—p. 69.
28 Hygiene in Munitions and other Factories. C. Lesieur.—p. 78.

February, No. 2, pp. 157-308

29 *The Duties of the "Technical Adjunct." Louste.—p. 221.
30 *Vaccination against Typhoid from the Ophthalmologist's Standpoint. F. de Lapersonne.—p. 236.
31 *Surgical Repair of External Genital Organs after War Wounds. J. de Sard.—p. 239.
32 *The First Devices to Aid the Amputated. Baudet.—p. 245.

24. **War Fractures with Displacement of Bones.**—Delorme is medical inspector general of the French army, and he here presents the results of research on cadavers with fractures and displacement of the stumps or of broken off portions. The differences between these war fractures and ordinary fractures are great as he shows for each of the large bones in turn, with illustrations. Certain general laws are apparent through all, and roentgenoscopy is constantly throwing new light on the subject.

25. **Specificity of Antiseptics.**—Taylor remarks that two years of observation of persisting infection in several thousand cases of war wounds have convinced him that this branch of medicine has made but little progress. Even today it is still impossible to say "This is the proper method to be followed in treating an infected wound." He attributes this to the scant attention hitherto paid to the individual characteristics of the different antiseptics in relation to the characteristics of the bacteria in the wound. We probably

will have to give up the hope of a general antiseptic; we must apply the specific antiseptic for the specific bacteria in the wound. His tabulation of the germ content week by week in different wounds with different bacteria predominating shows more streptococci, for instance, by the fifth week than were present the first week in wounds treated with cresol or with hypotonic salt solution. With the pyocyaneus, the figures the first and fifth weeks were respectively 50 and 60 in wounds treated with quinin; 33 and 55 with Dakin's solution; while, treated with acetic acid, the number of germs dropped from 35 the first week, 22 the second, 11 the third, to zero the fourth and fifth. With staphylococci, the figures under cresol were, the first week, 73 and 40 the fifth week; under Dakin's solution they were 77 the first and 40 the fourth week (fifth week not mentioned). With the aerogenes capsulatus, under dry dressings the figures were 2, 2, 3, 7 and 4 on successive weeks, while in the wounds dressed with quinin, from 20 the first week, the figures were constantly zero in the following weeks . These were the most striking findings in his experiments with all the various kinds of antiseptics used in the innumerable cases. The average with all other antiseptics, beside those specified above, showed a higher figure for the germs the fifth, in comparison to the first week, except in the case of the aerogenes capsulatus in which the figures were respectively 12, 7, 6, 7 and 1 on successive weeks.

29. **The Duties of the "Technical Adjunct."**—Louste refers to the general technical supervision of barracks, camps and cantonments and the troops themselves. The office of technical adjunct has been created for the purpose, as a kind of medical efficiency engineer. It presupposes the absolute confidence of the chief of the army medical department who entrusts him with full authority as his representative. It also presupposes the close collaboration and support of the commander of the forces. Louste is himself *adjoint technique* for the fourth district. When he entered on his duties he insisted on a general meeting of the staff at which he explained the importance of close collaboration between the military and the medical departments, the resources which the laboratories can furnish, and the necessity for uniform control, and of a constant and identical surveillance. He here presents his report on conditions in the barracks, camps, etc., with suggestions for improvement. Among the minor improvements which he has brought about, he mentions the great change for the better when the men were able to keep up a vegetable garden; the hundreds of pounds of lettuce, carrots, beans and cabbage thus raised at Laval gave the troops stationed there actual homelike food, not merely the army ration. In regard to drinking water, he says that the rule to boil the water cannot be applied at present on account of the scarcity of coal. Well cared for Chamberland filters are used where they are already on hand. Chlorination of the water seems to be the simplest method for purifying it for barracks and camps, but it must be in the charge of experts, provided with a double set of receptacles.

He remarks that in dealing with the local civilian authorities it should be a principle not to criticize a condition unless one has a simple and practical solution of the problem ready to propose. He deplores that in the education of army officers they are not given training in matters concerning the hygiene, physiology and health of the men in their charge. "Even with all the progress realized," he remarks, "the commanders of the forces are not always in close sympathy with the chiefs of the medical departments. If this regrettable gap could be filled up, the medical officer and the military officer would understand each other better, and close cooperation between the commanding officer and the medical department would be not only an official regulation and on the order of the day, but it would be a living reality, to the great benefit of the country which would find in the army a new source of life based on reciprocal confidence and esteem."

30. **The Eyes as Affected by Vaccination Against Typhoid.**—Summarized in the review of ophthalmology in 1917, abstract 37, p. 1914.

31. **Restorative Surgery of the Genital Organs.**—De Sard gives a profusely illustrated description of four cases in which the external organs of procreation and urination were restored to more or less satisfactory aspect and functioning after destructive war wounds.

32. **The First Aids After Amputations.**—An illustration shows the simple device with which after amputation of the forearm, a fork, spoon or hook is fastened in a reenforced plaster cone, wound with gauze to form a cap which fits over the stump and is held in place by a strap buckled to a cushion on which the elbow rests. With various modifications of this principle the man can use his arm for numerous purposes. A similar temporary plaster dressing, with a lathe incorporated, can serve for the leg, letting the stump hang loose.

Archives Médicales Belges, Paris

October, LXX, No. 10, pp. 897-1000

33 *The First Dressing of a War Wound. H. Vincent.—p. **897.**
34 *Reflex Paralysis and Contracture. M. Molhant.—p. 910.
35 *Anesthesia and War Surgery. D. Baruch.—p. 928.
36 *Foreign Bodies in the Brain. H. Burger.—p. 936.

33. **The First Dressing of a War Wound.**—Vincent insists that the interval before infection gets an actual start in a wound is shorter than most believe. Instead of eight or twelve hours, the damage is done in six or even four. He knows of cases of gas gangrene developing in six hours. In certain regions around Verdun, the perfringens was found in every wound. Crushing of tissues from one to eleven days after experimental inoculation of guinea-pigs with nonpathogenic perfringens was followed by development of gas gangrene. He cites further other data to sustain his plea for immediate sterilization of a war wound at the first dressing, especially when the wounded are coming in in large numbers. "When a man is wounded in war, moments are precious. Hours are worth days; hours are worth lives." In many years' experience in Madagascar, from 1894 on, and again in the present war, he has never found anything to equal the efficacy of calcium hypochlorite plus nine parts boric acid for prompt sterilization of wounds. Extensive research always brings him back to this mixture as more effectual than all others. The wound is powdered well with it, and it is insufflated into all the recesses and into seton wounds, running the nozzle of the atomizer deep into the wound. This dry powder is slowly dissolved by the secretions in the wound, taking three or four hours for this. This holds the germs in check, and the man reaches the field hospital with his wound in the same condition as when the wound was first dressed. "Merely to apply an aseptic dressing on the battlefield and at an advanced dressing station is too platonic for the formidable infections stalking the wounded. This dry powder treatment does not interfere in the least with whatever measures are to be taken later, when the man reaches the field hospital." His experience is confirming more and more the effectual sterilization realized by thus powdering the wound thick with a mixture of 10 parts of calcium hypochlorite to 90 parts boric acid passed through a No. 70 sieve.

34. **Reflex Paralysis and Contracture After War Wounds.**—Molhant presents evidence, from his experience at the special hospital for the nervous affections of the war, to the effect that so-called reflex paralysis and contracture are in reality usually the manifestation of a definite and irremediable organic injury. This injury is a terminal neuritis of the sensory nerves, but the manifestations deceptively simulate those of hysteria, and the latter may be superposed on the organic lesion. The symptoms may be of the hypertonic order: reflex irritability; or of the hypotonic order: reflex paralysis. He explains how the motor and sensory fibers are associated throughout except where they leave the spine, and at their terminals. Blocking of the peripheral nervous impulse at either of these points may generate motor disturbance of purely reflex origin, although the lesion which causes the blocking may involve the sensory fibers alone. The terminals of the deep sensory fibers are in the soft parts surrounding joints and in the periosteum. Injury of any of these injures the sensory terminals, and may irritate to excessive functioning or may paralyze. The paretic reflex may be manifested by paralysis or contracture, but the con-

tracture is due merely to excessive functioning of the antagonist muscles. Applying a tourniquet to the root of the limb abolishes the contracture, and we can see that the trouble is really a paralysis with the antagonists getting the upper hand. Instead of keeping these patients on in the hospitals indefinitely, trying to cure their "hysteria," the organic base of their affection should be recognized early and they should be fitted with prostheses and discharged from the ranks or given light duty. He devotes several pages to description of means by which these organic disturbances can be differentiated.

35. **Anesthesia for the Wounded.**—Baruch gives some tracings which show that the suffering induced by an operation is unconsciously perceived by the nerve centers notwithstanding deep chloroform narcosis; this is rendered evident by the immediate intense fluctuations in the blood pressure in the carotid artery. Under the same conditions, but with the trunk nerve blocked with novocain, the blood pressure was not modified. He agrees with those who maintain that the pain excitations transmitted to the nerve centers, especially to those in the bulb, are the effectual cause of operative shock. Faradization of the exposed sciatic nerve in the chloroformed dog will convince the most skeptical. Local anesthesia should be given the preference always when at all practicable, namely, infiltration or regional anesthesia. This blocks the nerve, sparing the nerve centers the strain from perception of the pain, while the anesthetics employed are in such weak solutions that they are free from toxic action and do not modify the functioning of the emunctories. Of equal importance is the fact that they leave intact the patient's capacity for reaction.

36. **Foreign Bodies in the Brain.**—The conclusions of this review of the present consensus of opinion in regard to management of projectiles in the brain are to the effect that the ventricles and the base of the brain must still be regarded as regions inaccessible to surgery. Otherwise, the majority seem to agree that cautious extraction of the projectile at once, through the passage made by its entrance, is the preferable procedure.

Napoleon used to say, "I do not believe in medicine, but I believe in Corvisart"—his physician. His definition of medicine has seldom been surpassed: *l'expérience chez un homme supérieur.* Burger reiterates that experience is a better guide than theory, and that although there are a certain number of men, apparently doing well, who for a year or two have been carrying a bullet, fragment of shell, or shrapnel ball in their brain and seem to tolerate it perfectly, yet the projectile remains always a constant menace for the health, besides the man's worry over its presence. Experience has further demonstrated that the extraction should be done at once. A secondary operation for an apparently well tolerated foreign body is not advised. The work should be done at the first operation, at the same time as all splinters of bone are removed.

Bulletin de l'Académie de Médecine, Paris

October 30, LXXVIII, No. 42, pp. 471-498

37 Némirovsky's Apparatus for Locating Projectiles in the Tissues. S. Pozzi.—p. 474. See Paris Letter, p. 1990.
38 The Epidemics of 1916 in France and the Colonies. Mosny and others.—p. 480.
39 Tetanus in Connection with Chilling of the Feet. H. Vincent.—p. 492. See Paris Letter.
40 Sulphur as Specific Treatment of Psoriasis. L. Bory.—p. 495.

Paris Médical

October 27, VII, No. 43, pp. 337-352

41 *Operative Treatment of Chronic Lesions of the Ascending Colon, etc. G. A. C. de Pury.—p. 337.
42 Electricity in Vocational Training of Disabled Soldiers. J. Larat and A. Billiard.—p. 344.
43 *Posterior Adenoiditis as Source of Meningitis, etc. G. Rosenthal and J. Cheville.—p. 348.
44 Apparatus for Extension of Fractured Humerus. Stern and Bentami.—p. 348.

41. **Chronic Colitis.**—De Pury deplores that too often it happens that chronic intestinal trouble is ascribed to the appendix alone. Appendicectomy without inspection of the adjoining intestines is liable to leave the main source of trouble unmolested. Nine times in ten the cecum is diseased along with the appendix. Particularly important is the perityphlitis with dilatation of the cecum and chronic appendicitis, with more or less constriction of the angle of the colon just below the liver. It is at this angle that the inflammatory phenomena are most frequent and most pronounced, and adhesions most abundant. This is where the trouble starts which brings the appendicitis in its train, and it may set up cholecystitis, pancreatitis, duodenal or gastric ulcer and even disturb kidney functioning and favor development of tuberculous lesions in the kidneys or abdomen, and entail the whole series of gastro-intestinal atonies. Aside from the inflammatory phenomena on the part of the appendix, perityphlitis demands operative intervention whenever the symptomatic trilogy, pain, constipation and autointoxication, persist rebellious to systematic medical and dietetic measures.

The operation should aim to restore the regular open sewer throughout the bowel. The enlarged cecum forming a pocket where feces stagnate must be restored to normal size and shape; all adhesions along the small intestine and colon must be broken up, and any kink in the colon must be straightened out. He gives a detailed description with the roentgen findings in four typical cases of the kind. Conditions were restored to clinically normal by taking up lengthwise folds in the cecum until the lumen was reduced to normal size and shape. He reiterates that the stagnation of feces with secondary infection is always the primary trouble, starting the inflammation in the wall of the intestine, whence it is liable to spread in any direction, but almost inevitably it entails atony of the cecum which stretches, just as the bladder stretches when its wall becomes infected. With both, along with the atony, there is liable to be spasmodic stenosis. The insidious development of the whole trouble and the mildness of the symptoms at first are misleading, so that the nature of the trouble is not recognized. Courses of treatment for neurasthenia, dyspepsia, etc., give no relief, and not even appendicectomy. Uncontrollable vomiting after eating may occur from retrograde peristalsis on account of constricting adhesions or kinking of the bowel, usually both. Vomiting from retrograde peristalsis from this cause is not uncommon in young girls. The clinical picture deceptively simulates that from pylorospasm from dilatation of the stomach or gastric ulcer or stenosis of the pylorus or irritative dyspepsia. In most cases nothing but roentgenoscopy will permit the correct diagnosis. This alone will reveal that in many cases of neurasthenia, etc., the whole trouble is merely constipation from constriction or kinking of the colon, which renders it impossible for it to empty itself completely.

43. **Posterior Adenoiditis.**—Rosenthal and Cheville assert that further research and experiences have confirmed anew that the primary and fundamental seat of meningococcus infection is in the rhinopharynx, a posterior adenoiditis. But whatever its scientific and pathogenic importance, this primary lesion causes no pain and hence is overlooked. Smears from the rhinopharynx may give cultures and cell counts which throw light on many clinical cases of serious infection, and point the way for effectual treatment by sterilization of this primary focus.

Presse Médicale, Paris

November 1, XXV, No. 61, pp. 625-632

45 *Malarial Amnesia. H. de Brun.—p. 625.
46 Immediate Treatment of War Wounds of the Chest. L. Hayem.—p. 627.
47 Resection and Suture of the Intestines for War Wounds. J. Abadie.—p. 629.

November 8, No. 62, pp. 633-644

48 *The Curability of Chronic Tuberculosis of the Kidneys. II. N. Hallé.—p. 633.
49 Talipes Equinus after War Wounds. M. Lance.—p. 635.
50 *Malignant Endocarditis of Slow Course. R. Debré.—p. 638.
51 *Intravenous Injections of Isotonic Sugar Solution in Treatment of Septicemia. G. Audain and F. Masmonteil.—p. 641.
52 Present Status of Ether-Oil Anesthesia by the Rectum. J. Luzoir.—p. 641.

45. **Loss of Memory in Malaria.**—De Brun of late has found amnesia one of the most characteristic features of malarial polyneuritic psychoses. Almost a third of the malaria patients

in his service at the Rueil hospital have more or less impairment of the memory. With a primary attack, the memory of that period may be permanently a complete blank. One of his patients had no remembrance of anything connected with his stay in the hospital and for several months thereafter. The malarial subject may also present retrograde amnesia, unable to remember certain periods in his previous life, possibly back into childhood. Some of the men have forgotten completely a foreign language which they spoke fluently before the malaria. Others have forgotten historical events and geography, or lost their knowledge of music or mathematics. Skilful electricians cannot recall the most elementary principles of physics and electricity, and are unable to instal the simplest electric device. Artisans have forgotten the uses and names of their tools.

The situation is aggravated further by fleeting phases of loss of memory for the ordinary acts and duties of life, amnesia for happenings since the sickness, inability to concentrate the attention. Some complain of headache and visual disturbances whenever they try to focus their attention on anything. They are unable to read with attention, and forget almost at once what they have read. One of the educated men was unable to count beyond ten. Sometimes they write and mail a letter and later in the day write and mail another just like it. They even forget whether or not they have had their meals. Some of the men have been sent to the guardhouse for failing to do what they had been ordered to do. The dangers of such lapses of memory are peculiarly acute in the case of officers. The men acquired the malaria in the Saloniki region, and they do not stay long enough in the Rueil hospital for the ultimate outcome to be known.

48. **Curability of Chronic Tuberculosis of the Kidney.**—Hallé reiterates that removal of the tuberculous kidney usually leaves foci elsewhere in the body. The mortality in the first few years after the operation is still quite high. Pathologic anatomy has demonstrated that there are two forms of tuberculous processes in the kidneys, the closed parenchymatous process, which is spontaneously curable and relatively benign, and the open tuberculous pyelitic process which generally keeps up a progressive and destructive course. The process may be of the first type at first but finally merge into the second type. In the first type, early and active medical treatment would hasten the favorable outcome, but this type is rarely recognized. The second type, if the course is rapidly progressive, calls for nephrectomy at once, but if the course is more benign and slow, expectant treatment is justified, hoping for spontaneous retrogression which occasionally occurs. When an operation is required, nephrectomy is called for. Partial nephrectomy is futile unless for a closed parenchymatous process, and this does not require operative treatment at all.

50. **Slow Malignant Endocarditis.**—Debré remarks that this disease is not sufficiently known and often it is not even suspected. Even when the endocarditis is diagnosed, the physician fails to realize that the ups and downs slowly progress to an inevitably fatal outcome. It does not seem to be contagious, but series of cases have been known at a few points. The streptococcus responsible for it is not usually pathogenic. Possibly meteorologic conditions rouse it to virulence. It has been observed in children and at 52 and 53, but usually young adults are the victims. Nearly all have a history of acute articular rheumatism in childhood, entailing a chronic valvular trouble. Another constant finding is that some mild tonsillitis or laryngitis or attenuated genital infection has directly preceded the endocarditis lenta. This evidently exalts the virulence of the germ and favors its entrance into the blood stream. The loss of strength and flesh, the pallor, irregular fever and slight chills are generally ascribed to influenza. Some joint or joints may swell and a return of the articular rheumatism is surmised. This condition may keep up for weeks, and tuberculosis may be suspected or some blood disease. There is nothing to suggest active endocarditis until finally the tendency to purpura, enlargement of the spleen, the joint and valvular troubles and the discovery of the streptococcus in the blood stream aid in differentiating the disease. There may be periods of improvement, but the trend is inexorably downward. The fatal termination is generally due to some embolic softening of the brain or cerebral hemorrhage from rupture of an aneurysm, or coronary embolism or gangrene of embolic origin. The disease may prove fatal in a few months or not until after two years.

51. **Intravenous Sugar Solution in Septicemia.**—Audian and Masmonteil state that their experience has been constantly favorable with intravenous injection of an isotonic solution of sugar in treatment of septicemia. Where the leukocytes numbered from 5,000 to 7,000 before the injection, afterward the count jumped at once to 25,000 in less than a half hour, and kept at this level for two or three hours, and even then did not decline below 16,000. The polynuclears formed 80 to 90 per cent. of this hyperleukocytosis. The reaction seems as intense as after injection of colloidal metals. The temperature runs up a little, with a chill, followed by sweating, like a malarial attack. Induced hyperleukocytosis is regarded by many as the only rational treatment of infections to date. The sugar solution, besides, provides nourishment and has a stimulating influence on the kidney cells, starting up diuresis. The solution must be isotonic: 47.6 per thousand with glucose; 103.5 per thousand with saccharose, or 108.9 per thousand with lactose. From 300 to 500 gm. have to be injected before the leukocyte reaction is realized, but on repetition in the graver cases they do not hesitate to inject 1,000 or 2,000 gm. during the day, fractioned. The leukocyte count is the guide; they inject enough to keep it about 25,000. A severe chill during the hour following the injection is sign that this limit has been reached. This treatment has proved very useful for the septicemia after war wounds. Sometimes two or three injections of 500 gm. will bring the temperature permanently to normal. In desperate cases the amounts can be larger than this and kept up for ten or twelve days or longer if necessary. They never noticed any untoward by-effects but found it necessary to keep up the treatment four or five days after defervescence. This method of treatment applies also to erysipelas, rheumatism, etc., and they are going to try it in infectious diseases.

Correspondenz-Blatt für Schweizer Aerzte, Basel

October 27, XLVII, No. 43, pp. 1425-1456

53 *Effect of Antipyretics on Fever Center. A. Lüthy.—p. 1425.
54 *Nitrobenzol not an Abortifacient. J. R. Spinner.—p. 1439.

November 3, No. 44, pp. 1457-1504

55 *Treatment of Diabetes. R. Stähelin.—p. 1457.
56 Tumors of Knee Joint Capsule. G. A. Guye.—p. 1474.

53. **Effect of Antipyretics on Fever Center.**—This communication from the Pharmacology Institute of the University of Zurich reports the results of research on the prolonged administration of antipyretics in fevers. With fever of bacterial origin, the drug does not seem to modify the reacting power of the temperature center. As soon as the drug is stopped, the temperature rises again proportional to the degree of the intoxication. On the other hand, if the rise is the result merely of functional irritation of the region of the fourth ventricle, regular administration of antipyretics materially reduces the excitability of the temperature center. This may aid in differentiating in dubious cases.

54. **Nitrobenzol not an Abortifacient.**—A number of cases of poisoning from nitrobenzol are on record in which the drug had been used to induce abortion. Some of them terminated fatally, as in a case described here by Spinner. But only one instance is known of abortion having been induced by this means alone, while seven deaths are known in the sixteen cases cited from the literature. The amounts taken in the fatal cases ranged from a tablespoonful or a swallow to 100 gm. In the one reported successful case the assumed pregnancy may not have actually existed. Cyanosis may be the first symptom, and the odor reveals the cause. Recoveries are on record after ingestion of 100 or 400 gm. The drug is an active poison for the blood, besides irritating and then paralyzing the nervous system.

55. **Treatment of Diabetes.**—Stähelin reiterates that it is actual malpractice to leave a patient with any sugar in his urine when by any means it is possible to banish it permanently. As long as there are even traces of sugar in the urine

there is more or less hyperglykemia, and hence always a menace of gangrene or carbuncle, besides the constant danger of the diabetes progressing to a severe form. By freeing the urine permanently of sugar, the tolerance for carbohydrates gradually increases. Determination of the amount of carbohydrates the patient can assimilate is a tedious matter for both patient and physician, but it is indispensable. The urine has to be measured and tested daily for the sugar content, and this kept up for several weeks. The patient has to be taught how to collect and measure the urine; he must have a collecting vessel and scales to weigh his food. Stähelin gives tables of the findings over a month or two in some typical cases on ordinary diet, on suspension of carbohydrates, and on their gradual resumption. Drugs have little influence on the glycosuria, and only in doses that do direct harm otherwise, but every day new proprietaries are advertised for diabetes, and not only diabetics but some physicians are misled by them. Tabulation of the findings day by day shows plainly that none do any good. If a liter of any kind of a decoction is drunk before retiring, the percentage of sugar in the night urine will certainly drop, but merely because so much water is being voided to dilute it. The patient is convinced that he has improved under the tea drinking, and frequently the physician shares his mistaken impression. The dangerous feature of this mistake is that the really important thing, the dietetic restrictions, is neglected in consequence. The careful working out of the dietetic measures and enforcing them, regardless of everything, usually improve the disturbance in the metabolism to an extent equivalent to a complete cure, and in any event increase the strength, and enable the patient to live for years or even decades in comparative health.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 21, XXXVIII, No. 84, pp. 1121-1136

57 *Influence of Roentgen Rays on Malaria. A. Pais.—p. 1123.

October 25, No. 85, pp. 1137-1144

58 Removal of Polyp in Knee Joint. N. Federici.—p. 1137.

October 28, No. 86, pp. 1145-1160

59 Remuneration for Medical Certificates. E. Villa.—p. 1159.

57. **Roentgen Treatment of Malaria.**—Pais declares that roentgen treatment modifies essentially the course of malaria. Small doses in a first attack attenuate the disease, while large doses change the cycle of the fever. It seems as if the new generations of parasites display exalted virulence under the influence of the radiation. Chronic malaria rebellious to quinin may yield completely under the exposures, or the infection may be so modified that quinin may regain its potency. Among the fifty patients thus treated the disease seems to have been arrested in nearly all, and the spleen has subsided to its normal outlines.

Pediatria, Naples

March, XXV, No. 3, pp. 129-192

60 Abscess in Liver of Boy of Eight. R. Jemma.—p. 129.

61 *Cirrhosis of the Liver in Child with Inherited Syphilis. O. Pentagna.—p. 140.

62 Case of Cerebral Bilateral Flaccid Paralysis. R. Vaglio.—p. 151.

61. **Cirrhosis of the Liver in Child.**—The child was 2 years old when symptoms of cirrhosis of the liver developed and proved fatal in less than a year. The necropsy findings confirmed the assumption of inherited syphilis. Mercurial treatment came too late; the liver had been already irremediably damaged when the child was first seen.

Policlinico, Rome

October 21, XXIV, No. 43, pp. 1281-1304

63 *Diagnosis of Pulmonary Tuberculosis. A. Murri.—p. 1281.

64 *Serotherapy of Meningitis. A. Capogrossi.—p. 1287.

65 Improved Apparatus for Inducing Pneumothorax. E. Morelli.—p. 1292.

October, Surgical Section No. 10, pp. 393-432

66 *Splenectomy and Omentofixation in Banti's Disease. L. Losio.—p. 393.

67 *War Wounds of the Knee. G. L. Petrilli.—p. 401.

68 *Plastic Operations on the Esophagus. G. Razzaboni.—p. 417.

69 Malignant Edema without Gas Production. I. Scalone.—p. 425. Continuation.

63. **Diagnosis of Pulmonary Tuberculosis.**—Murri protests against a recent ruling by the authorities to the effect that suspects must go to the hospital for thorough examination. He declares that any one skilled in recognition of pulmonary tuberculosis can rely on the clinical findings, examination of the sputum and roentgenoscopy. Long study of the case is superfluous, as a rule.

64. **Serotherapy in Meningitis.**—Capogrossi relates that in twenty-five of his twenty-seven cases of meningococcus meningitis last year, he resorted to intraspinal serotherapy according to the usual technic. The two others were injected with their own serum. The prognosis can be regarded as favorable when the patient is young, and the cerebrospinal fluid is milky and under high pressure, with few germs, and these all intracellular. In such cases recovery is frequent after lumbar puncture alone; the organism seems able to generate its own antibodies under these conditions. The evidence seems to favor the assumption that the meningococci get early into the blood and linger there for some time. This and other data cited suggested the possibility that autoserotherapy might prove effectual. He tried it in two cases in which the cerebrospinal fluid was so purulent and thick that it would not flow. About 7 c.c. of the man's own serum was injected intraspinally twice in one case, but the man died the third day. In the second case, 20 c.c. of the cerebrospinal fluid was evacuated and 10 c.c. of autoserum was injected. The fever subsided at once and within a week the cure was complete. The serum was obtained from 100 c.c. blood drawn from the elbow. It was kept on ice after clotting at room temperature. The autoserum was heated to body temperature before being injected. The venesection should be done at once as soon as the diagnosis is certain. When fresh antiserum is not available, this autoserum might answer the purpose. It certainly is a harmless procedure. In protracted cases, it might prove a valuable adjuvant, when there might be fear of anaphylaxis with continued use of the commercial antiserum. The blood in such cases has probably elaborated considerable amounts of spontaneous antibodies, and injecting them into the spinal canal places them just where they are needed.

66. **Operative Treatment in Banti's Disease.**—Losio reports a case which illustrates anew the benefits from splenectomy plus omentopexy, even in advanced cases of Banti's disease with cirrhosis of the liver. His patient was a woman of 58.

67. **War Wounds of the Knee.**—Petrilli relates that wounds of the knee have formed nearly 3 per cent. of the wounded in his service. The wound healed aseptically in 49.2 per cent. of the total 126 cases. In the much infected cases, he keeps the joint open, the exposed bones temporarily flexed and dislocated until the sepsis is conquered, the patient lying prone to facilitate draining, at least for the first few days.

68. **Plastic Operation on the Esophagus.**—Razzaboni gives an illustrated description of the results of his experiments on dogs. He resected through a subhyoid incision a portion of the wall of the upper esophagus, embracing about half its circumference, leaving a defect the size of an Italian penny. This defect was then closed with a flap taken from the rectus muscle in such a way that it included the aponeurosis, muscle fibers and peritoneum. Two of these flaps were prepared and placed in warm physiologic solution while the laparotomy incision was sutured. The flap was fastened to the wall of the esophagus with a marginal interrupted suture, done with the finest silk, the peritoneal surface facing the lumen. The second flap was then sutured over this, the peritoneal surface facing outward, the suture thread passing only through the outer layers of the esophagus wall. The eight dogs thus treated demonstrate the feasibility of the procedure. The continuity of the esophagus wall is restored and the stenosis left is not sufficient to prevent adequate feeding.

Anales de la Facultad de Medicina, Montevideo

August-September, II, No. 7-8, pp. 401-556

70 *Herpes Zoster. E. Boix.—p. 401.

71 *Traumatism in Psychiatry. S. C. Rossi.—p. 502.

72 *Pyelotomy. (La talla pielica.) L. A. Surraco.—p. 539.

73 *Indications for Evacuation of the Uterus in Severe Pneumonia. C. P. Colistro and J. C. Carlevaro.—p. 547.

70. **Herpes Zoster.**—Boix devotes a hundred pages to this exhaustive study of the nature and pathogenesis of zona with reports of a number of unusual cases. In one a four-day infant developed herpes zoster on the right side. In another a woman had intercostal zona a week or two before delivery and the child developed intercostal zona at the second month. This is the only instance of which he has knowledge that suggests possible direct contagion. He cites Pugliesi's case (1891) of general febrile herpes zoster in a young woman, also Boulland's case of bilateral zona complicated with generalized herpes, and Landouzy's case in a physician who has had 100 attacks of herpes since severe zona in his student days. These and other data cited justify the assumption that zona is not exclusively a nerve or skin disease but a combination of both. It is not a morbid entity but merely a clinical syndrome from the combination of the change in the nerve, which may be local or general, old or recent, and the infection, local or general, acute, subacute or chronic, the determining cause of the eruption. The nerve changes and infection may occur simultaneously, as is evident in certain cases of traumatic zona. The different forms of zona are merely different manifestations of the same morbid action, which requires for its production a transient or chronic change in the nerve and some infection which is far from specific although bearing the general designation of herpetic. The unicity of the zona syndrome seems beyond question. Among the cases reported is one in which the zona started in the eye and involved the two superior branches of the trigeminal nerve on the paralyzed side of a woman of 60 with inherited severe nervous taint. In another case the intercostal zona was from a nerve compressed by a diseased bronchial gland in a girl of 8 recently recovered from measles and whooping cough. The vesicles extended down on the fingers. In two other cases in children, inherited syphilis or abdominal tuberculosis evidently afforded a predisposition. In none of the four child cases mentioned was there any pain from the zona. The article is in French.

71. **Traumatism in Psychiatry.**—Rossi is chief of the national insane colony, and he here discusses whether it is possible for mental disease to develop from traumatism alone and whether mental disease after a traumatism differs from that of other origin. He analyzes what has been written on the subject and says that there can be no doubt that there are certain mental clinical pictures which do not need more etiology than a traumatism to explain them, whether the trauma affected the brain directly or not. In others the traumatism may have been merely the provocative cause, of secondary (although of decisive) importance. Traumatism should not be given a higher place in the clinic of the brain than in the clinic of other regions of the body. In respect to the medicolegal responsibility for the traumatism cause, experts should be guided by the general rules for common accidents.

Traumatism can be included in the etiology of mental affections as a determining, occasional or predisposing cause. When it is the determining cause, the symptoms induced are those of denutrition, inhibition or destruction, which induce the clinical pictures of neurasthenia, confusional states or simple demential conditions, according to the severity and the evolution of the traumatism. When the traumatism is merely the occasional cause, it may contribute to the flaring up of latent affections or induce, in association with the symptoms of the other affection, mental symptoms of another character. As a predisposing cause, the traumatism may induce organic lesions which in their healing or evolution, even silent and slow, may serve as an anatomic substratum for organic dementia in the future, or even possibly general progressive paralysis. The medicolegal expert should sift out from the clinical picture the extraneous elements, determine the relations between cause and effect, and draw the prognosis, estimating the degree of mental impairment particularly in relation to the subject's professional and other exigencies.

72. **Advantages of Pyelotomy for Anuria.**—Surraco has only one case to report, but the advantages of incision of the renal pelvis were striking here. The young woman had had anuria for five days from low obstruction of both ureters. The condition was so critical that he made an incision into the renal pelvis without further delay. This permitted evacuation of urine better than if the ureter or the body of the kidney had been opened, while infection could be warded off more effectually and the fistula can be closed at any time with greater ease than when in the body of the kidney or the ureter.

73. **Indications for Instrumental Delivery in Pneumonia.**—Colistro and Carlevaro report two cases in which labor set in during severe pneumonia, and they hastened delivery with forceps. The results were so good that they advocate this systematically in grave bronchopneumonia and pneumonia instead of waiting for spontaneous delivery. The fetus is not exposed to greater danger from the forceps than from the mother's severe infectious disease if left waiting in the uterus. The mother's dyspnea, struggling heart, and fever place her in no condition to stand the stress of labor and delivery. They emphasize, however, that they refer merely to intervention without further danger in itself for the mother.

Cronica Medica, Lima, Peru

October, XXXIV, No. 652, pp. 355-394

74 *Spirochetosis Icterohemorrhagiae at Lima. J. Arce and R. E. Ribeyro.—p. 355.
75 Case of Syphilitic Meningomyelitis. E. Odriozola.—p. 361.
76 Present Status of Spirochetosis Icterohemorrhagiae. J. Arce.—p. 365.
77 Dissociated Jaundice and Cholemic States. H. Castañeda.—p. 375.

74. **Icterohemorrhagic Spirochetosis in Peru.**—Arce and Ribeyro report a case of what seemed to be Weil's disease in a Japanese who had been in Peru for eight years. He recovered in about a month under a sodium sulphate purge, quinin and tonics. At the eighteenth day of the disease guinea-pigs were injected with 5 or 6 c.c. of his urine, and they developed a similar hemorrhagic infectious jaundice, as also other guinea-pigs inoculated with scraps from their kidneys. The microscope further confirmed in the clinical case and in the animals the presence of the *Spirochaetae icterohemorrhagiae* of Inada and Ito. Their communication is dated Sept. 24, 1917, and they remark that so far as they know, it is the first case of the kind reported in America.

La Escuela Medico-Militar, Mexico

I, No. 2, pp. 1-16

78 *The Retina of the Mexican Axolotl. I. Ochoterena.—p. 2.
79 *Treatment of Cicatricial Ectropion. E. Ramirez.—p. 4.
80 Abdominal Hysteropexy. A. E. Vidales.—p. 7.
81 Leishman Ulcer in Chicle-Gum Collectors. E. Cervera.—p. 9.
82 Technic for Collecting Pathologic Material for Examination. E. Cervera.—p. 10. To be continued.
83 Postpartum Hemorrhage. R. Cravioto.—p. 13.
84 Intraspinal Injection of Anesthetics. V. J. Sanchez.—p. 15.

No. 3, pp. 1-22

85 *The Leukocyte Formula in Human Beings, Rabbits and Guinea-Pigs in the Valley of Mexico. F. Ocaranza.—p. 2.
86 *Technic for Disarticulation of the Hip Joint. D. Moreno.—p. 4.
87 Technic for Collecting Pathologic Products for Examination. E. Cervera.—p. 6. To be continued.
88 Gastro-Enterostomy in Mexico. J. Martinez y Gonzalez.—p. 9. To be continued.
89 Abuse of Dressings. L. H. Moro.—p. 20.
90 Intraspinal Cocain Anesthesia. J. Adalid y Castillo.—p. 21.

78. **Research on Comparative Histology.**—This study of the retina of a lizard-like amphibian found in the Lake of Mexico is accompanied by a large colored plate of the microscopic findings.

79. **Cicatricial Ectropion.**—Ramirez gives an illustrated description of the various technics in vogue for this purpose, and his own method. With this, two triangular flaps are cut, one below the eye and the other at the outer angle. These flaps are swung around to cover the defect, the result being merely a long curving linear scar.

85. **The Leukocyte Count in Mexico.**—This study of comparative physiology of the blood of persons and animals, acclimated in the valley of Mexico, disclosed a remarkable difference in the staining properties of the leukocytes as well as wide differences in the blood count. The figures are the averages from forty guinea-pigs, fourteen rabbits and large numbers of adults, of all trades and professions and of both sexes. In man the neutrophils predominated, form-

ing 51 per cent. of all the leukocytes, while in the guinea-pig the neutrophils and lymphocytes nearly balance each other. In the rabbit the lymphocytes outnumber the neutrophils nearly three to one, and the eosinophils formed 13 per cent. of the total leukocytes; in the guinea-pig, only 5 per cent.

86. **Disarticulation of the Hip Joint.**—Moreno's profusely illustrated article shows the various steps of the operation for this purpose as he applies it. There is no hemorrhage, as the muscle fibers are not severed but only separated from their attachments, as they run parallel to the straight incision. It slants from the posterior superior iliac spine to the upper margin of the greater trochanter. After detaching the tendons and pushing the muscle fibers apart, the head of the femur is dislocated and sawed off and the upper two thirds of the incision are sutured, the lower third drained. So far the operation has been simple. The whole is complete in less than twenty minutes. Then at once, or five or six days later, the limb is amputated. Hemorrhage is warded off by the assistant's fingers pressing on the vessels. This is a simple matter, as there is no bone left in the region. The whole amputation, being only in soft parts, takes but a few minutes—not over fifteen at most. There is no operative shock, no hemorrhage, and scarcely any crushing of the tissues. With this technic, he declares, disarticulation of the hip joint becomes practically a minor operation.

Prensa Medica Argentina, Buenos Aires

October 10, IV, No. 13, pp. 161-172

91 Operation on Sphenoidal Sinus by Endoseptal Route. E. V. Segura. —p. 163.
92 Interpretation of the Phenomena with Electric Stimulation of Nerve and Muscle Tissue. V. Tedeschi.—p. 164.
93 *Atypical Forms of Pneumonia in Young Children. J. P. Garrahan. —p. 168. Commenced in No. 12, p. 148.

93. **Atypical Pneumonia in Young Children.**—Garrahan mentions that in the recent unusual prevalence of pneumonia at Buenos Aires, a remarkable proportion of cases were encountered in infants less than a year old. There were three deaths, but extraneous causes could be incriminated for them. Roentgen examination has led to great progress in the management of pneumonia in young children. He found the right apex the site of the pneumonia in seventeen of his forty-one cases. In a number the onset of fever was accompanied by abdominal pains; in others, a pleural effusion dominated the scene. In one child of 2, in the third month of whooping cough, the pneumonia was accompanied with a comatose condition, with icy extremities. For four days this alarming syndrome was combated with mustard baths, oxygen, camphor, serum, epinephrin, etc. The pneumonia of the right apex was associated with an intense reaction on the part of the pleura, and the disease lasted seventeen days, but complete recovery then was prompt. The particulars of sixteen cases are given and the literature reviewed.

Semana Medica, Buenos Aires

September 20, XXIV, No. 38, pp. 329-354

94 Ancient and Modern Conceptions of Syphilis. D. Speroni.—p. 329.
95 *Management of Delivery with Contracted Pelvis in Infected Cases. J. A. Gabastou.—p. 332.
96 The Charitable Institutions of Buenos Aires. E. R. Coni.—p. 341. Continuation.
97 Identification of Certain Derivatives of Morphin. J. A. Sanchez. —p. 348. Continuation.

95. **Delivery with Contracted Pelvis.**—Gabastou discriminates between primiparas and multiparas in the infected cases of contracted pelvis. Pubiotomy, which might serve well for the latter, is contraindicated for primiparas, other conditions being equal. It is also contraindicated in case of varices on the genitals. With established and grave infection, extraperitoneal cesarean section is, of course, out of the question. The Porro operation is preferable when the fetus is viable.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 22, II, No. 12, pp. 1023-1114

98 Experimental Research. (Voor en tegen proeven op levende dieren. V.) G. van Rijnberk.—p. 1023.
99 *Importance of Superficial Tension of the Medium for Ferment Action and Catalysis. J. T. Groll.—p. 1029.
100 *Treatment of Purulent Arthritis of the Knee. J. C. van Vliet.—p. 1042.
101 *Digestibility of Bran Bread. M. Hindhede.—p. 1047.
102 *Reinfection with Syphilis. W. J. Bais.—p. 1052.

99. **Superficial Tension as Factor in Ferment Action.**—Groll writes from the physiology laboratory of the University of Amsterdam to relate much experimental and clinical research on biochemical topics. He discusses in particular the influence on solutions of the superficial tension of various substances and ferments. All the evidence testifies to the great importance of the superficial tension and the viscosity of the medium in modifying the action of ferments and the catalytic processes.

100. **Suppurating Process in the Knee.**—Van Vliet remarks that Opitz as late as April, 1915, advocated amputation at the first signs of suppuration in the knee. Hansing two months later reported eight deaths and nine amputations in twenty-three cases of the kind. The change for the better in the outcome of such cases is shown by Heddaeus' report, in Bruns' *Beiträge*, January, 1917, that he lost only one of seventy patients with suppurating arthritis in the knee and that sixty-three were left with a fairly functionating joint. He got the cases within a day or two after the injury, and after cleaning out the wound he rinsed with 3 per cent. phenol or neutral solution of chlorinated soda, and immobilized.

Later than the second day, no treatment can save the joint. Van Vliet in his work at the Mannheim and Heidelberg hospitals did not get the cases until they were a week or two old. Even at this late stage he obtained excellent results with limited resection and fixation on a wooden frame that held the knee partially flexed, a small gap in the frame directly under the knee allowing for free drainage and open treatment of the wound. The best results were obtained when the patella and the joint cartilages were removed. This ensures better draining and better consolidation later. Open treatment of the wound saves the patient much pain and discomfort, besides the economy in dressings.

101. **Digestibility of Whole Grain Bread.**—Hindhede reiterates that the normal persons whom he subjected to his extensive tests (mentioned recently in these columns) digested bran as well as a pig digests it and, when ground fine, they digested it even more completely than cattle digest it. Von Noorden has also become convinced by experiences during the war that whole grain flour is digestible. He is now even inclined to credit to the extensive use of bran-containing bread a large part of the success attained by the so-called drugless healers. Hindhede pleads therefore that bran should not be taken from people and fed to cattle under the present circumstances. By feeding grains to animals we get back in the form of food only about 20 per cent. of the value.

102. **Reinfection with Syphilis.**—Bais writes from Sumatra to tell of a case of recent primary syphilis treated with such success, the Wassermann reaction veering to normal, that the man returned a year later with a second unmistakable primary infection. This also was conquered within a few months, the same as before. The Wassermann reaction was still negative when reexamined nine months after this second infection. The tenth month he returned with his third primary infection. The spirochetes swarmed in the primary chancre each time. Neosalvarsan and mercury had been the treatment. In a second case of reinfection there was evidence that the man contracted the infection the second time from a woman he had himself infected at his first attack, thus the same strain of spirochetes was presumably responsible for both. Bais thinks that the publication of such cases of positive cure will lessen the tendency to neurasthenia in those acquiring the disease.

Hospitalstidende, Copenhagen

October 10, LX, No. 41, pp. 997-1020

103 *The Influence of Treatment of Syphilis on the Different Reactions in the Cerebrospinal Fluid. C. With.—p. 997. Commenced in No. 40, p. 973.

103. **Influence of Treatment on Reactions in Spinal Fluid in Syphilis.**—With analyzes and tabulates the findings in this line at the dermatologic service at the Copenhagen General Hospital.